To the Graduate Council:

I am submitting herewith a dissertation written by Donald E. Price entitled "The Relationships of Self-Management, Time-Management, and Personality Measurements to Academic Performance." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

Robert L. Williams

Robert L. Williams, Major Professor

We have read this dissertation
and recommend its acceptance:

Philip Gary Kluttz

Donald J. Dickinson

Sarita P. Thomas

Accepted for the Council:

Lou Minkel

Associate Vice Chancellor
and Dean of The Graduate School

THE RELATIONSHIPS OF SELF-MANAGEMENT, TIME-MANAGEMENT, AND PERSONALITY MEASUREMENTS TO ACADEMIC PERFORMANCE

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Donald E. Price

May 1996

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DEDICATION

This dissertation is dedicated to my parents

Elliott Andrew Price

and

Roberta Mills Price

who never gave up on me

and were always there when I needed them.

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I would like to thank my major professor, Dr. Robert L. Williams, for his foresight and patience. When I originally approached him with an idea for my dissertation he agreed to be my chair, but he also recommended I work on a second project just in case I didn't get enough control subjects. I didn't get enough control subjects, so this is the result of that second project he recommended. He also had to tolerate me two years beyond when we both expected me to finish. I would also like to thank my other committee members, Dr. Sandra Thomas, Dr. Gary Klukken, and Dr. Donald Dickinson who all gave input and encouragement. A special thanks to Mrs. Joann Rothery who provided invaluable assistance by introducing me to personality type and supplying me with her reference materials to begin my search. I would also like to thank Dr. Jim and Kay Waters for providing me with a house on the edge of paradise in the Great Smoky Mountains to get away and start writing again. And lastly I would like to thank my wife who put up with me throughout this. She knew that ENFP types were easily distracted and did her best to keep me focused on the final objective.

Abstract

The primary purpose of this study was to determine how well self-reported self-management, time-management, and personality measures predict academic performance in an undergraduate education course which has a self-directed format. The predictive potential of self-management practices, time-management practices and personality type (as assessed by the Myers-Briggs Type Indicator) was first considered for each variable separately and then for the three variables in combination. Scores on the self-management, time-management, and personality inventory were correlated with four academic measures: ACT, GPA, total points in a course organized to be largely self-directing, and grade in the self-directing course. These correlations were computed with and without the Marlowe-Crowne social desirability scores partialled out. All three instruments showed significant correlations with some of the academic measures; however, the self-management and time-management scores were most significantly linked to college GPA when those students one standard deviation above and below the mean were compared. Overall, the Myers-Briggs Type Indicator was more consistently and more strongly related to the academic measures than was either the self-management or the time-management questionnaire.

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CHAPTER I

INTRODUCTION

This study evaluated the importance of self-management, time-management, and personality type in predicting academic performance of college students. The principal instruments used to evaluate these three constructs were the Lifestyle Approaches inventory (LSA), the Time Management Questionnaire (TMQ), and the Myers-Briggs Type Indicator (MBTI).

Traditional measures of college academic potential have been limited to high school grades or high school rank supplemented by college aptitude test scores. However, with approximately 50% of the students who enter college not graduating (Kowalski, 1977), it appears that the traditional predictors of college success are inadequate.

With the rising cost of college education and the limited ability of states to fund such education, it has become imperative that we improve our prediction of student success. Funding those students who have little chance for success in college may deny other more capable students the opportunity for a college education, a real waste of human potential.

What are some of the non-traditional variables that would likely impact an individual's chance of succeeding in

college? In looking at the variables affecting college grade point average, Long, Gaynor, Erwin and Williams (1993) have proposed that self-management may be one important predictor:

> Although there are myriad student variables that might affect students' academic performance, one dimension that would logically seem to be linked to academic performance is self-management skills. For example, it would seem reasonable that students who typically set goals for themselves and then systematically move toward those goals would fare better academically than those whose lives are quite disorganized. (p. 3)

Williams and Long (1991) have extensively investigated the self-management research of the last 20 years. The research they reviewed covered such divergent topics as smoking cessation, weight loss, and effective study skills. Each of these studies contributed to the understanding of self-management, but only relative to a specific problem area. Williams and Long took the results and conclusions from these studies and integrated them into a comprehensive plan that individuals could use for making changes in their lives. Their resultant text, Manage Your Life (1991), became the basis for the Lifestyle Approaches Inventory (LSA), an instrument designed to assess the self-management skills of individuals (Williams, Moore, Pettibone, & Thomas, 1992).

The LSA includes a balance between cognitive measures and behavioral measures on four major factors: performance focus and efficiency, goal directedness, timeliness of task accomplishment, and organization of physical space. Overall, the LSA presumably measures the level and precision of one's lifestyle organizational practices.

One aspect of self-management that could have a positive influence on academic success is time management. Lakein (1973), in his book How to get Control of Your Time and Your Life, strongly recommends that everyone learn the skills of time management. His approach is to select lifetime goals first. Short term goals come second, but must be prioritized in relation to how they support the lifetime goals. The third task is a daily "to-do" list, again prioritized to prevent the individual from spending all his/her time doing inconsequential or unnecessary tasks. He leaves the reader with the admonition to always ask, "What is the best use of my time right now?"

Nearly two decades later Fry's (1991) book Manage Your Time was published as part of the "How to Study" program. Fry included defining long-range, mid-range, and short-range goals, making a schedule, listing tasks and prioritizing them, and most importantly deciding what is important. Little seems to have changed concerning time management in 18 years.

Both the above texts, while containing some excellent ideas, suffer from a lack of empirical support. The research that has been conducted has found relationships between time management and stress level (Macan, Shahani, Dipboye, & Phillips, 1990), time management training and time management behaviors (Hanel, 1981), and time management training and time spent in stress reducing activities (Hall & Hursch, 1982), but it was not until Britton and Tesser (1991) developed a time management questionnaire and conducted a longitudinal study that time management was empirically linked to college grades.

The Britton and Tesser study was based on the Britton and Glynn (1989) model which included such topics as choosing goals, prioritizing goals, and making a "to-do" list, among other things. The recommended time management skills haven't changed much, but now research supports the relationship between time management practices and college grades.

Another personological variable that may be related to academic performance is personality type (i.e., one's predominant pattern for approaching life experiences). In order to study personality as a predictor of academic performance, one must have an instrument that can be used to categorize individuals according to personality type. In the present study, the Myers-Briggs Type Indicator (MBTI) was used for that purpose. This instrument, which is based

on Carl Jung's personality theory, was developed by Katherine Briggs and Isabel Myers as a means for helping individuals better understand themselves and others.

In order to understand the MBTI, one must have some understanding of Jung's typology. In his system of personality, Jung classified individuals as either extravert or introvert. In describing the extravert he states: "His interest and attention are directed to objective happenings, particularly those in his immediate environment. Not only people but things seize and rivet his attention. Accordingly, they also determine his actions, which are fully explicable on these grounds" (Jung, 1971, p. 334). Thus, the extravert is energized by things outside himself, especially contact with other people. In comparing the extravert with the introvert, Jung states:

> The introvert is distinguished from the extravert by the fact that he does not, like the latter, orient himself by the object and by objective data, but by subjective factors....the introvert interposes a subjective view between the perception of the object and his own action, which prevents the action from assuming a character that fits the objective situation (p. 373).

Thus, in contrast to the extravert who receives energy from the outside world, the introvert is energized by internal ideas and times of solitude.

Jung further classified individuals by what he called rational or judging processes versus irrational or perceptive processes. Judging preferences were further classified as thinking or feeling, and perceptive preferences as sensing or intuition. Ultimately, Jung's classification scheme included eight possible personality types: Extraverted thinker or feeler or sensor or intuitor or an introverted thinker or feeler or sensor or intuitor.

In designing the MBTI, Myers and Briggs converted Jung's classifications and processes into four scales representing four dimensions of personality. Extraversion and Introversion constitute the first scale; Sensing and Intuition, the second scale; Thinking and Feeling, the third scale; and Judging and Perceiving, the fourth scale. Individuals who take the MBTI receive a score on each of the four scales and a letter indicating their type preference (e.g., "E" for Extravert, "T" for Thinking). The letters from each scale are then combined into a four-letter type code that is indicative of an individual's personality. Altogether, there are 16 possible personality types specified by the MBTI.

Researchers have investigated differences among the types in relation to learning styles. For instance, Myers and McCaulley (1985) described the different ways that various personality types learn: "Academic achievement requires the capacity to deal intensively with concepts and

ideas, which are mainly the province of introversion. It also requires the capacity to work with abstraction, symbols, and theory, which are the province of intuition" (p. 9). Myers and McCaulley go on to explain that intuitive introverts will have a relative advantage in an academic setting because their interests match the requirements for academic achievement. In their comparison of the judging and perceiving learning styles, Myers and McCaulley indicate that the planful, focused, organized style of the judger is often associated with higher grades (Myers & McCaulley, p. 96). Campbell and Davis (1988) describe the four letter MBTI preference as a learning preference and outline the specific style of learning that is preferred on each of the four scales. Extraverts, for example, prefer group activities, while introverts prefer individual work.

The individual learning style of the student is often the cause of frustration for teachers. Teachers often find that the teaching strategies they use are successful with some students and not with others. This sentiment was expressed by Long, Gaynor, Erwin, and Williams (1993) who stated: "Undoubtedly, the characteristics that students bring to a learning experience, as well as the teacher's characteristics and instructional strategies, affect how students respond in a course" (p. 3).

If, in fact, self-management or personality provides a framework for learning, then it would appear that certain

personality types, namely those who manage their lives well, will do better in college than other types. The MBTI's 16 different personality types are suggestive of 16 individualized approaches to learning and teaching. Even when the MBTI is broken down into the four quadrants of IS, IN, ES, and EN, considerable diversity in teaching/learning would still be indicated.

Statement of the Problem

The present criteria for college admission, high school grades and pre-college tests, do not adequately measure student potential for success. With nearly half of all students who are admitted to college not completing college (Kowalski, 1977), there is a clear need for further predictors of which students will readily succeed in college and which others will need additional help in order to be successful in school.

Purpose of the Study

The primary purpose of this study is to assess the importance of self-management, time-management, and personality dimensions in predicting college students' academic performance. These dimensions were assessed by the Lifestyle Approaches inventory (LSA), the Time Management

Questionnaire (TMQ), and the Myers-Briggs Type Indicator (MBTI), respectively.

The LSA was developed to measure lifestyle organization, i.e., knowing one's priorities and being able to achieve those priorities in an efficient fashion. The LSA has been linked to several physical and mental health variables such as health status, health habits, and reduced stress, but has not been effective in predicting academic performance in traditional college courses. This study will examine the LSA's potential for predicting academic performance in a more self-directed learning environment.

The TMQ was developed to measure the level of time-management planning for both short-range, one week or less, and long-range, a full term. It also measures one's attitude about the perceived control of one's time. Both the short-range planning and time attitudes have been significant factors in predicting grades. They accounted for 21% of the variance in GPA in a four year college study (Britton & Tesser, 1991).

The MBTI has been frequently used to identify personality type and has been recently used to predict academic success in specific domains. This study will use the MBTI to determine if personality type/learning style is a predictor of academic performance in a course structure emphasizing student self-direction.

Significance of the Study

If self-management and time-management variables as well as personality type can be used in conjunction with traditional predictors of college performance to improve prediction of academic success, then the results can be used to identify those students who might need academic and/or personal support in order to succeed in college. The results of this study may also suggest whether certain personality types are optimal for self-directed learning.

Limitations of the Study

1. The sample was restricted to 296 university students enrolled in the Psychoeducational Issues in Human Development course taught during the Fall 1992 semester, and Spring and Fall 1993 semesters at the University of Tennessee, Knoxville.

2. The sample was further limited to those students who volunteered to be a part of this study. However, most students enrolled in the five classes volunteered to participate.

3. All subjects were told that their instructor would not know their individual scores, but these students may have still been inclined to give what they considered to be socially acceptable answers.

4. Because the self-management, time-management, and personality inventories used in this study were all self-report measures, they were susceptible to social desirability response tendencies. To preclude social desirability response tendencies from biasing the results, the Marlowe-Crowne was administered and scores on the instrument were partialled out of the correlations between the psychological variables and the academic performance measures.

Definition of Terms

1. Self-management. The cognitive and behavioral self-reports of practices individuals use to manage their daily lives as measured by the Lifestyle Approaches Inventory (LSA).

2. Time-management. The self-reported short-range and long-range planning one does as well as the attitude one holds about having control of one's time as measured by the Time Management Questionnaire (TMQ).

3. Personality type. The mental habits that individuals use in responding to events in their daily lives as measured by the Myers-Briggs Type Indicator (MBTI).

Organization of the Study

Chapter I identifies the problem, states the purpose of the study, the significance of the study, identifies some limitations and defines key terminology.

Chapter II covers a review of related literature.

Chapter III covers procedures used in this study: Subject selection and description, course description, a description of the four assessment devices used, and test administration.

Chapter IV presents the findings of the study.

Chapter V provides a conceptual analysis of the findings, presents conclusions, and makes recommendations for further research.

CHAPTER II

REVIEW OF LITERATURE

Introduction

This chapter covers the literature dealing with theories of personality development, self-management and time-management skills as predictors of academic success in college. Under the present system colleges use high school grades and pre-college test scores, either the American College Test (ACT) or the Scholastic Aptitude Test (SAT), as criteria for admittance. Under this present system of academic prediction 40% to 60% of students admitted do not graduate. Studies by Crouse and Trusheim (1988) and Kowalski (1977) bear this out. The present study attempts to determine what measures will better aid colleges to select students who will reach degree status.

What kind of students tend to succeed in college? Based on the results of several studies, Thomas (1988) concluded that proficient students are goal oriented (i.e., they have an understanding of what they should be able to do or remember when they complete their studying). The second characteristic of proficient students according to Thomas is efficiency. They select what is important, read for meaning, work problems as they occur, and check to

ensure that the end product is correct. The third characteristic is the translating of materials to be learned into future applications, testing the adequacy of understanding of the material. The fourth characteristic is the ability to manage their time. They are aware that there are distractions and devise ways to stay on track. The fifth and final characteristic is a sense of personal efficacy. Thomas states, "This sense of personal efficacy combines self-confidence in one's academic ability with a sense of personal control--the belief that learning is no one else's responsibility but one's own" (p. 268).

How is Thomas' description of the successful student used in our present admissions process? It is almost completely ignored, with the emphasis instead being placed on the traditional use of the ACT/SAT and high school grades. However, The American College Testing Program admitted in its guide Your College Freshmen (1971) that test scores are predictive of first year performance, "but not for later college performance" (p.14). Pre-college testing, normally the American College Test (ACT) or Scholastic Aptitude Test (SAT), may be as much a measure of cultural advantages as it is a measure of academic potential (Owen, 1985, p. 10).

Of the traditional predictors of college success, high school grades are the best predictor; yet, even the predictive potential of grades is moderated by the academic

atmosphere of the high school attended (The American College Testing Program, 1971, p. 100). Admissions officers of selective colleges keep records of which high schools produce quality students to compensate for this disparity among schools (Owen, 1985, p. 268).

Some researchers have suggested alternatives to traditional admissions requirements in predicting success in college (Kanoy, Wester, & Latta, 1989). Kanoy and colleagues found studies that indicate many students lack the study skills, organizational skills, time management ability and perseverance to meet college expectations. Some students have had so much parental supervision that they are not prepared to manage their own time and study habits. Others have never had to study in high school and are unprepared for the rigors of college standards. These deficiencies were found to be especially true for lower-performing and some minority students.

Kanoy, Wester, and Latta concluded that nontraditional psychological and cognitive measures (e.g., perseverance, personal expectations, locus of control, social support) are as important, or possibly more important, than traditional college admission requirements in predicting college success. They based their conclusions on the results of the following studies: (a) Astin (1975)--110 personal characteristics of college students were analyzed and 53 found to contribute significantly to the prediction of

dropping out; (b) Chapman, Cullen, Boersma, and Maguire (1981)--academic self-concept and expectations correlated positively with report card grades in school children; (c) Gose, Wooden and Muller (1980)--achievement was found to be related to subject specific and general academic self-concept measures in sixth graders; and (d) Nelson, Scott and Bryon (1984)--both personal characteristics and early college experiences correlated with freshman year persistence.

In their own study with 75 college women, Kanoy, Wester, and Latta (1989) found that the combination of high school GPA and locus of control scores more accurately predicted college grades for students anticipated to be high performers (grades predicted to be from 3.0 to 3.7) than did high school GPA alone. For students predicted to be lower performers (around 2.0 predicted grades), none of the traditional predictors was effective. Instead, locus of control and amount of effort accounted for 46% of the variance in GPA for the predicted low performing group.

The traditional college predictors do not include many of the personal management factors that can affect college grades. Thus, well-established-measures of self-management habits could make an important contribution to prediction of academic success. The Lifestyle Approaches inventory (LSA) is one instrument that could be used to assess college students' self-management skills. The LSA assesses an

individual's self reported propensity towards goal-setting behaviors, task completion, and organization of one's physical work space.

Student personality is another nontraditional predictor that may play a role in a student's ability to succeed in college. For example, a student's tendency toward sociability may affect that student's ability to establish rapport with the instructor and other students in a class. Interpersonal rapport, in turn, may affect the probability of getting assistance from others and receiving a favorable evaluation of one's academic work.

Evaluating student personality type is based on the foundational work of early personality theorists and the tests, indicators and instruments they designed to measure the adequacy of their theories.

Personality Theory

Current personality theory is an outgrowth of the early work done by pioneers in the field of personality development. The majority based their work on abnormal personalities. Early personality theory evolved from the needs of medical doctors to find a way to deal with psychological problems presented by their patients. Medical doctors concentrated on the practical concerns of what

caused these problems and how to correct them (Hall & Lindzey, 1957).

Personality theories can be divided into four major categories: Psychoanalytic/Neoanalytic, Trait, Humanistic/Existential, and Cognitive/Social-Behavioristic. This section will give a brief description of each theory.

Psychoanalytic/Neoanalytic Theory

This section includes Freud's psychoanalytic theory and the offshoots of that theory, the neoanalytic theories of Jung, Adler, Horney, Fromm, and Erikson.

Freud's Psychoanalytic Theory

Freud viewed instincts as the driving force in life and he used the term libido for the energy associated with all gratification (Freud, 1952). He postulated a structure of personality made up of the id, "rooted in the biology of the individual" (Jones, 1963, p. 2), consisting of unconscious sexual and aggressive instincts; the ego which deals in keeping the id in check and finding acceptable outlets for the impulses of the id; and the superego which is often equated to the conscience or the internalization of societal values.

Freud believed that the ego was continually coping with the conflicting demands of the id and superego, and though much of this coping was done on a conscious level the

unconscious was at work protecting the ego through defense mechanisms. These defense mechanisms, when used continually and indiscriminately, lead to mental illness.

Freud viewed personality development as psychosexual. He termed the first stage of development, infant to age 2, the oral stage because pleasurable or "sexual" impulses come through the mouth (Freud, 1969, p. 10). The second stage of development, age 2-3, is called the anal stage because the chief pleasure of the child is the retention or expulsion of feces (Freud, 1957, p. 324). The third stage, age 4-5, is the phallic stage during which all children derive pleasure from self-manipulation (Freud, 1957, p. 327).

The latency stage, age 6 to puberty, Freud saw as a period of sexual dormancy (Freud, 1969, p. 10). This dormancy is followed by a reawakening of sexual tension, called the genital stage, and if no earlier fixations have occurred then marriage and a healthy family life can follow.

If, on the other hand, fixation has occurred during an earlier stage unhealthy character types can emerge. From a fixation during the oral stage comes the oral receptive character needing constant support, or the oral aggressive character trying to dominate others (Fenichel, 1945, p. 489).

From the anal stage comes the anal retentive character; stingy, orderly, and obstinate (Blum 1953, p.161). From the phallic stage comes the phallic character. In men this is

exemplified by the Don Juan trying to prove they are "real men", while phallic women are described as "castrating females" (Blum, 1953, pp. 164).

The final or genital stage produces the genital character, which Freud viewed as the ideal type. He saw genital characters as capable of creative, productive, and artistic work; they are capable of finding their course through life (Freud, 1952, p. 776). The loss of libidinal energy due to a traumatic experience, usually sexual, can cause fixation at the stage where the traumatic experience occurs.

Freud's theory of psychosexual development has received some favorable empirical support. There appears to be support for the oral receptive character and the anal retentive character, but almost no support for the phallic character (Fisher & Juni 1982; Juni, Masling & Brannon, 1979; Kagan & Mussen 1956; Kline, 1972; Masling, Weiss, & Rothschild, 1968; Tribich & Messer, 1974).

Jung's Neoanalytic Theory

Carl Jung worked with Freud but broke away in 1913 because he could not accept the emphasis Freud placed on the sex drive. Jung referred to the total personality as the psyche, with energy flowing back and forth from inner to outer reality. Libido was a general life process energy. He saw psychic energy as resulting from conflict between

forces in the personality. He defined the psyche as "a general entity that operates according to the principle of opposites" (Ryckman, 1993, p. 69).

The ego Jung described as responsible for feelings of identity and continuity. Next to the ego is the personal unconscious that holds all the forgotten experiences that have gradually faded away, possibly because they were unpleasant. It also holds weak impressions not consciously recognized. These experiences can be brought to light through expert therapy or dream analysis. Dreams, Jung maintained, were involuntary and spontaneous eruptions of repressed materials. He felt dreams were an attempt to resolve current problems and further one's own development in a healthy direction.

The collective unconscious he claimed is "a deposit of world processes embedded in the structure of the brain and the sympathetic nervous system..." (Jung, 1969, p. 370). This collective unconscious is made up of instincts and archetypes that we inherit and that affect our behavior. Jung felt such collective memories were universal because of our common evolution and brain structure.

Archetypes have always existed. Jung maintained that we inherit a tendency to respond in certain ways, for example, calling on God in the face of danger. Archetypes he explained as thought forms or ideas that project visions

onto current experiences. Major archetypes in Jung's system include the persona, shadow, anima and animus and Self.

The persona is "a compromise... between the demands of the environment and the necessities of the individual's inner constitution" (Jacobi, 1962, p. 19). The persona functions as a mask. It can be useful or negative when we hide our real selves.

The shadow was Jung's name for the dark side of human nature. It represents the evil and inferior part of our psyches, those impulses we try to hide and repress. At times the shadow shows positive features, as when a selfish person unexpectedly makes a generous donation.

Both men and women have varying amounts of male and female hormones and characteristics obvious only when a male is noticeably effeminate or a female masculine in both action and appearance. The feminine archetype in men Jung called the anima and the masculine archetype in women the animus. The anima and animus can bring both positive and negative results. When the anima's intuitive capacity makes a man aware of feelings not normally sensed by a male, it is an advantage. The negative aspects of the anima allow men "to act in moody, 'bitchy' and 'catty' ways" (Ryckman, 1993, p. 76). The animus in women is positive when they are clear thinking and logical, but negative when, "Without knowing it, such women are solely intent upon exasperating the man...(Jung, 1964, p. 220).

The Self Jung saw as an archetypal potentiality in everyone. Self realization is one's final goal, when one attains balance and self understanding and can live more productively with himself and others. Jung saw people relating to experiences in different ways and with different attitudes toward life and using different psychological processes to make sense of what happens. From this Jung developed his theory of psychological type. Because Jung's psychological type theory is the basis for much of this dissertation, greater attention will be given later in the chapter to its basic tenets and its use in academic prediction.

Adler's Neoanalytic Theory

Alfred Adler for a period was associated with Freud; however, he was critical of some of Freud's concepts and this led to his separating from the Vienna Psycho-Analytic Society. He soon formed a group called the Society for Free Psycho-Analytic Research. Later he changed the name of the association to Individual Psychology to indicate his concern for the whole personality. Adler felt the individual could be understood only through his interaction with others.

Adler believed that all one's actions are determined by one's fundamental attitudes toward life. He saw behavior governed by future goals. People attempt to reach perfection or completion. According to Adler this reaching

for perfection was driven by feelings of inferiority. He saw the ultimate goal as superiority to be reached by constructive or destructive means. The destructive path meant trying to dominate and use others while the constructive way leads people to cooperation and good will. The development of healthy or unhealthy goals is largely determined in the first five years of life, a similar belief of Freud's.

Adler saw both parents as crucial to a child's developing life style. Parents must give the child healthy concepts of work, friendship and love, the three basic problems of life. Adler felt each child was treated differently by parents according to the birth order in the family. The first born child has the best understanding of power and authority, because he has been dethroned by the birth of a sibling. The second child is likely to view the older child as a competitor and may set unrealistic goals for himself, thus leading to failure. The baby of the family gets a great deal of attention and tends to be spoiled. The only child has no rivals and may be pampered to an extent that he or she has difficulty getting the sought after attention outside of the family. Other factors affecting children in the family are spacing, and sex of siblings. A healthy life style, Adler maintained, develops when children are treated with respect and consideration by their parents.

He saw the healthy person as one who lives by principles, yet can modify them if circumstances demand it. Adler divided people into four major types: (a) the ruling type, striving for personal superiority to the detriment of others, (b) the getting type, relatively passive and expecting others to care for them, (c) the avoiding type, trying to sidestep problems, and (d) the socially useful type who, as adults, treat people with respect, affection and friendship. They contribute to the development of the best possible community.

Karen Horney's Neoanalytic Theory

Karen Horney believed that the adult personalities of children were determined by their social and cultural experiences, "and that harsh and arbitrary treatment of children by parents lays the foundation for neurosis" (Horney, 1950, p. 17). Healthy development required parental warmth and respect. With such handling children developed to their highest potential and became their **real self**.

Horney maintained that one's realistic inner confidence could be destroyed by unfavorable environmental conditions, thus forcing them to find defenses to cope with others. The need for safety becomes their first consideration and leads to their creation of an idealized image to eliminate anxiety and pain.

Horney's principal focus was on abnormal development that caused neuroses; but her theories about self realization were important to the development of humanistic psychology. Much of Horney's work dealt with refuting the psychoanalytic approach, which considered men superior and conveyed the idea that all women were envious of men.

Erich Fromm's Neoanalytic Theory

Erich Fromm maintained that character development and the satisfaction of basic existential needs came from social and cultural conditions existing at the time. He recognized individual differences in temperament. He proposed that "character, which is based on experiences, and temperament, which is constitutional, combine to affect behavior" (Ryckman, 1993, p. 166).

The right social conditions allow people to develop their innate needs and potential. The norms of society are communicated to the child by his parents. Living with parents unable to love leads to nonproductive orientations in their children.

According to Fromm, a number of nonproductive orientations can result from a nonloving environment: The receptive character type, people who see the source of all good events as lying outside themselves; the exploitive character type, also believing satisfaction comes from outside sources and must be taken by force or cunning; the

hoarding character type who have little faith in others' goodness so withdraw; the necrophilous character type, fascinated by all that is dead; the marketing character type to whom appearance becomes the reality; and finally the biophilous character, the person who loves life and tries to mold others by precept and example. The biophilous orientation requires self-discipline. Parents and teachers who respond to children's creative attempts positively and are warm and supportive of all the child attempts, become role models for the child, thus helping him to develop a biophilous orientation.

Erik Erikson's Neoanalytic Theory

Erikson developed a liberalized view of the ego as first posited by Freud. He attributed to the ego "organizing and synthesizing functions that help people resolve inner conflicts as well as environmental challenges" (Ryckman, 1993, P. 184).

He maintained that the epigenetic principle controlled human development. He saw growth as occurring in stages that occur in sequence and are common to all. Each stage of development he believed is marked by a particular psychosocial crisis. Both positive and negative learning take place as each crisis is resolved.

Erikson named eight stages of development. (a) Oral-sensory from birth to one year is when basic trust or

mistrust is established. The ego strength acquired at this step is hope. (b) The muscular-anal stage from two to three years is characterized by the ego crisis of autonomy versus shame and doubt and the ego strength of will. (c) The locomotor-genital stage comes between ages four and five with the ego crisis one of initiative versus guilt. The hoped for ego strength at this stage is purpose. (d) Latency occurs between six and twelve and is the stage of crisis of industry versus inferiority with competence the hoped for ego strength. (e) Adolescence from 13 to 19 is a period of establishing identity versus confusion with fidelity the desired ego strength. (f) Young adulthood from 20 to 24 ideally establishes intimacy rather than isolation with love as the desired ego strength. (g) Middle adulthood from 25 to 64 is the generative period, as opposed to stagnation, with care for the next generation the hoped for ego strength. (h) Late adulthood from 65 to death brings ego integrity versus despair with wisdom the ego strength.

Erikson's ego psychology has done much to broaden the theoretical base of psychoanalysis and has had a practical impact on child psychology and psychiatry according to Ryckman (1993, p. 210).

Psychoanalytic/Neoanalytic contributions to this study

To Freud goes the credit for formulating an organized personality theory, some parts of which are accepted today

and others rejected. Jung's work followed Freud and as enlarged by Isabel Myers became a major factor in this dissertation.

Adler's belief that the individual could be understood only through his interaction with others, and Karen Horney's belief that the adult personality of the child was determined by his social and cultural experiences both strongly support Jung's Extraversion-Introversion index that is an integral part of the Myers-Briggs Type Indicator which is primarily based on Jung's work.

Fromm's ideas were similar to Jung's that personality development is a result of both innate character and experiences. Fromm's ideas tie in with Erikson's belief that organizing and synthesizing abilities are a part of the ego. These ideas and abilities are an integral part of the Judging-Perceiving index of the Myers-Briggs Type Indicator.

Trait Theory

This section includes Allport's trait theory, Cattell's structure-based systems theory, and Eysenck's biological typology, the three most prominent trait theorists.

Gordon Allport's Trait Theory

Allport first defined personality as "What a man really is." A later definition said "personality is the dynamic organization within the individual of those psychophysical

systems that determine his characteristic behavior and thought" (Allport, 1961, p. 28).

He saw personality as constantly evolving and changing by forces within the person. Behavior, he maintained, was regulated by the opposing tendencies within the person. He implied that personality consisted of mind and body organized into a complex unity. Allport's idea of personality "emphasizes the uniqueness of the individual and the internal cognitive and motivational processes that influence behavior" (Ryckman, 1993, p. 229).

Allport developed a trait theory, a trait being "a generalized and focalized neuropsychic system (peculiar to the individual) with the capacity to render many stimuli functionally equivalent and to initiate and guide consistent forms of adaptive and expressive behavior." (Allport, 1937, p. 295). He classified traits as cardinal, central, and secondary. Another distinction was common traits for classifying groups of people and personal dispositions, the unique characteristics of a person.

The self is at the center of personality development. Substituting the term proprium for self, he saw a lifelong development moving through a series of stages. In infancy the bodily self is primary in developing a sense of self. Self-identity also develops very early. In early childhood self-esteem emerges. The next stage is self-extension appearing from four to six years of age. In early years

children are selfish but with growing maturity become more unselfish, extending their concerns to family and on to nation. Self-image develops along with self-extension. Allport saw two components to self image, learned expectations and aspirations for the future.

During the period between six and twelve reflective thought develops and children begin to plan ways of coping. This part of self Allport labeled as the rational coper. Propriate striving, the setting and working toward long range goals was, to Allport, the highest form of selfhood. This is closely related to the development of conscience. With maturity people shift from a "must" to an "ought" conscience.

The developmental process Allport saw as one of becoming. Mature individuals are able to break away from earlier motives and participate in activities that enhance the welfare of others. They can relate warmly to others. Allport distinguished between two kinds of warmth: (a) intimacy-the capacity to love and (b) compassion-the ability to accept and respect individual differences. Maturity brings self-acceptance and emotional security. Mature individuals have a realistic perception of the world, know themselves and have a unifying philosophy of life.

Raymond Cattell's Structure Based Systems Theory

Cattell believes that theory must be based on multivariate research, analysis, and precise measurement. Measurement is the foundation from which come theories, and not the reverse. "Cattell's structure-based systems theory considers personality as a system in relation to the environment and seeks to explain the complicated transactions between them as they produce change and sometimes growth in a person" (Ryckman, 1993, p. 253).

Cattell's definition of personality tells what one will do in a given situation. In line with his mathematical analysis of personality he shows the definition as a formula: R=f(S,P). An individual's response (R) is a function (f) of the specific situation confronted (S) tempered by the individual's personality (P).

Cattell listed all the personality traits used to describe individuals. From those 4500 trait names he and Odbert eliminated synonyms bringing the total to 171. Further reductions through factor analysis of personality questionnaires brought the final number to 16 major source traits. These 16 basic source traits formed the basis of the Sixteen Personality Factor (16PF) Questionnaire.

Prenatal influences on personality are a concern of Cattell, in contrast to other theorists. He discusses Down's Syndrome, metabolic abnormalities, and head injuries, all of which cause mental deficiency. Temperament, he

believes, is related to the endocrine condition of the mother while she is carrying the child. "The physiological condition of the mother affects the normal process of nervous-system maturation in utero" (Cattell, 1950, p. 559).

Cattell is also concerned with the enormous impact of the environment later as the child develops. Research shows that with sufficient maturation untrained children learn many skills very rapidly and achieve an equivalent level with those who have been well trained.

Much personality learning occurs through instrumental conditioning in order to reach a goal. Confluence learning is the acquisition of behaviors and attitudes that help meet two or more goals. Cattell also discusses integration learning, "a form of cognitive and instrumental learning in which the developing person uses ego and superego processes to maximize long term satisfactions" (Ryckman, 1993, p. 279). Cattell agrees with Freud that the first five years of life are critical to the development of personality.

Ages six through 13 are fairly carefree. It is the time when children strengthen their egos and extend love beyond the family confines. Adolescence is a period of conflict. This is the period when young people must gain independence from parents, prepare for an occupation and achieve economic independence, getting a mate for

satisfactory sex expression, and acquiring a stable personality and an acceptable self-concept, not easy tasks.

Maturity, the period from 25 to 55 shows little personality change. There is some decline in biological efficiency but increases in creativity are possible as well as a more realistic evaluation of goals and aspirations. Near the end of this period romantic interests surface again with extra-marital affairs for men and for women a longing for romance.

Old age brings a loss of physical power and ingenuity declines. However, not all seniors are "doddering old codgers" (Ryckman, 1993, p. 280). In fact there is a wide variation in the rate of decline.

Hans Eysenck's Biological Typology Theory

Eysenck noted two trends in psychology, experimental and personality, with marked indifference to each other by the theorists concerned. He contends the two approaches must be integrated by identifying the principal dimensions of personality, devising measures for them, and using experimental, quantitative procedures in order to build a sound theory of personality.

Eysenck defines personality as:

> a more or less stable and enduring organization of a person's character, temperament, intellect, and physique, which determines his unique adjustment to the

environment. **Character** denotes a person's more or less stable and enduring system of conative behavior (**will**); **temperament**, his more or less stable and enduring system of affective behavior (**emotion**); **intellect**, his more or less stable and enduring system of cognitive behavior (**intelligence**); **physique**, his more or less stable and enduring system of bodily configuration and neuroendocrine endowment. (Eysenck, 1970, p. 2)

His definition emphasizes traits which he organizes into types, traits, and habits. Types are the most abstract and are based on the intercorrelations among traits. Traits are determined by intercorrelations of habitual responses, and habitual responses are determined by observable responses that can be measured.

Gathering data from different populations all over the world, Eysenck isolated two factors which he labeled introversion/extraversion and stability/neuroticism. Using statistical analysis he inferred a third dimension, impulse control/psychoticism. He sees these three dichotomies as the major individual differences in personality. Eysenck then developed a test to measure them.

Although he uses the same terms as Jung, for the extravert/introvert factor, Eysenck does not accept Jung's account of their origins or how they operate. Jung's typology was based on his idea of the flow of libido within the psyche, outward toward life or inward toward subjective

experience. In contrast, Eysenck does not see these attitudes as originating or operating in the subterranean psyche of the individual (Eysenck & Eysenck, 1985, p. 48).

Eysenck sees people as biosocial, born with certain innate predispositions, but these predispositions or traits can be somewhat altered by socialization. "Thus the environment and our genes interact to produce behavior, with the biological factors typically playing the stronger role" (Ryckman, 1993, p. 313).

Eysenck sees a strong genetic basis for his personality types: (a) The same three personality types are found universally in very different cultures, (b) the traits are stable within individuals over long periods of time, and (c) the evidence provided by twin studies confirms the genetic hypothesis.

Socialized conduct, Eysenck maintained, was mediated by conscience, "which he defines as the sum total of an individual's learned or conditioned responses" (Ryckman, 1993, p. 314). Pavlov type conditioning prevents individuals from performing some behaviors society will not accept. Introverts learn the acceptable behaviors earlier and more thoroughly than extraverts because of chronically higher cortical arousal. Introverts tend to form very strong consciences.

Eysenck maintains that though personality is genetically based, it does respond to socialization. He

also argues that intelligence is a major aspect of personality and has strong genetic roots, but can be altered by environmental influences. Based on twin and blood relative studies he attributes 80% of human intelligence to inheritance and 20% to the influence of environment. Eysenck sees human beings as genetically unequal in traits and intelligence. He favors a meritocracy in giving access to higher educational and career opportunities. Eysenck and Cattell are in agreement on their insistence on careful measurement to assess personality.

Trait Theory Contributions to this Study

The trait theorists add strength to the growing body of literature supporting the Myers-Briggs Type Indicator. Allport's theories tie in well with the Introversion-Extraversion index of the MBTI.

Cattell emphasized the need to base theories on multivariate research, analysis and precise measurement. Isabel Myers' initial work with the MBTI followed Cattell's belief in precise measurement by carefully measuring numerous groups, e.g., high school students, college students, and professional people. With the results from these groups, Isabel Myers made the following modifications: (a) Word pairs were added so those people who chose significant words in the sentences to compare would only have two words in the dichotomy to compare, (b)

instructions were added to assist people who responded more to word sound or appearance than to word meaning, (c) responses were weighted to add to item discrimination (discrimination indexes above .62 received one point, above .72 received two points, and items which received above .50 from types classified on the opposite pole were eliminated, thus dropping much of the socially desirable responses), (d) items no longer meeting the discrimination criterion of .63 were dropped, (e) all items were factor analyzed to ensure that they not only discriminated between poles, but that they contributed to only one of the four indices, (f) sex weighting was added to offset stereotypical and societal influences, and (g) both sides of the dichotomy were counted and subtracted to offset the effect of non answered dichotomous questions.

Eysenck gathered data from different populations all over the world and isolated two factors, introversion/ extraversion and stability/neuroticism common to all people. He then developed a test to measure them. Eysenck saw people as biosocial, born with innate predispositions somewhat altered by socialization. His introversion/ extraversion factor corresponds with the same scale on Isabel Myers' test (later called the Myers-Briggs). The belief that some personality characteristics are innate and some are the result of socialization corresponds to Jung's belief and Isabel Myers' interpretation of it.

Humanistic/Existential Theory

The humanistic/existential approach to personality growth concentrates on the creative potential inherent in human beings and looks for ways to help them reach their highest potential. Humanistic psychologists posit the existence of an innate "growth" mechanism that moves one toward achieving his/her top potential. This process has been called self-actualization, self-realization, or selfhood. Many psychologists have contributed to its roots, but it is best exemplified by Maslow, Rogers, and May.

Maslow's Self-Actualization Position

Abraham Maslow laid the groundwork for his theory of self-actualization by assuming the intrinsic nature of human beings is good, or at least not bad. Healthy development, however, takes place only in an environment that provides the raw materials and then lets the individual make his own choices.

Maslow's objective was to establish "scientific ethics, a natural value system, a court of ultimate appeal for the determination of good and bad, of right and wrong" (Maslow, 1962, p. 4). Human beings have two sets of needs, deficiency, or basic needs, and growth, or meta needs. Basic needs must be met first. These are our physiological drives, safety needs, love and belonging needs, and esteem needs. Necessary to fulfilling these needs are "freedom to

speak, freedom to do what one wishes so long as no harm is done to others, freedom to express oneself, freedom to investigate and seek for information, freedom to defend oneself, justice, fairness, honesty, orderliness in the group (Maslow, 1970, p. 47). Basic needs cannot be met without these freedoms.

The basic physiologic needs include hunger, thirst and sex. Unless these needs are reasonably well met, one cannot progress to higher level needs. Once these needs are fulfilled, self-actualization and cognitive understanding become the focus of one's concern. Discovery that one has abilities brings happiness but also fear of new responsibilities and fear of the unknown. Maslow called this the Jonah complex. This area brings to light decided male and female differences. "Maslow pointed out that many women fear the best in themselves. They do not utilize their intellectual abilities to the fullest because achievement is considered unfeminine and they fear social rejection" (Ryckman, 1993, p. 379).

Maslow saw poor socialization practices as contributing to a desacralizing attitude that interfered with achieving self-actualization. He blamed parents who held no personal values and who let their children do whatever they wanted to do for this attitude in young people. Until these youths who have come to despise their parents learn to relinquish their cynicism and mistrust of adults and recognize that all

people have virtues and strengths as well as faults, self-actualization is not possible for them.

Maslow believes that, "personal growth occurs in families in which parents provide a safe, non-threatening environment and children are encouraged but not pushed, to try new and challenging activities. It is the children themselves who must set their own goals and make their own choices" (Maslow, 1962, p. 47).

Rogers's Person-Centered Theory

Carl Rogers's psychology is built on the subjective experiences of the individual. A person's judgments and behavior are determined by their subjective experiencing of reality rather than by objective external reality. One's phenomenal field is composed of everything that occurs within one at a given moment, both conscious and unconscious. Conscious awareness can be symbolized verbally or imagined. Healthy individuals, Rogers believes, are able to symbolize their experiences completely and accurately.

Rogers posited that all people have within them an actualizing tendency or drive toward one's potential. He based this concept on his experiences with troubled people in therapy. He noticed in them

> a growth tendency, a drive toward self-actualization....It is the urge which is evident in all organic and human life--to expand, extend, become

> autonomous, develop mature....This tendency may become deeply buried under layer after layer of encrusted psychological defenses...but it is my belief that it exists in every individual, and awaits only the proper conditions to be released and expressed. (Rogers, 1961, p. 35)

There is both a biological and a psychological side to the actualizing tendency. The biological aspect aims at fulfilling basic survival needs while the psychological aspect is concerned with developing the potential that makes one a better person.

Rogers felt that infants see their experiences as reality. Infants engage in an organismic valuing process in which they make judgments about the worth of what is happening to them. Rogers claimed that infants instinctively knew which foods and experiences were good or bad for them. The valuing process for adults is far more complicated. Value judgments may change. Rogers believes that in the end adults must trust their own wisdom rather than what they've learned from others.

The self-concept is at the core of Rogers' theory. It is composed of the characteristics one feels are particularly his own. It is based on the evaluations of significant people in one's life and ignores one's inner feelings. Because we value others' opinions of our worth, our self-concept carries conditions if we are to continue to

have approval, i.e., do what others expect of us, not necessarily what we believe is right. The healthy self-concept is "unconditional positive regard--a deep and genuine caring by others, uncontaminated by judgments or evaluations of our thoughts, feelings, or behaviors...there is a congruence between self and experience, and the person is psychologically healthy" (Rogers & Sanford, 1984, p. 1379). Rogers maintains that persons who are self-accepting should be more accepting of others.

May's Existential-Analytic Position

Rollo May's concepts and principles depend largely on existentialism. The term existentialism has been used in so many ways it has almost lost its meaning. It is concerned with ontology or the center of one's being. It deals with personal experiences. May defines existentialism as "the endeavor to understand man by cutting below the cleavage between subject and object which had bedeviled Western thought and science since shortly after the Renaissance" (May, 1958a, p. 26).

The existentialists propose that we bring our inner world experiences into our view of science. Scientists should concentrate on meaningful human problems. May thinks that all human beings have the capacity for both good and evil. Science needs to be concerned with both the inner man and the objective side of human nature.

Existentialists hold some beliefs in common: (a) All take the person as the starting point. (b) Free will is the central concept in understanding human development, and (c) The focus is on the immediate experience of the person. "Truth exists only as the individual himself produces it in action" (May, 1958b, p. 12).

To be authentic we must be ourselves and not let other people set our goals and tell us how to act. The exercise of freedom demands a price. It can create anxiety. If one accepts society's moral values it may lead to self-alienation. In this area May holds similar views as those of Rogers and Maslow.

May's existential-analytic perspective integrates some of Freud's ideas and differs in others. Both psychoanalysis and existentialism ask questions about human existence. Both focus on the rational and irrational sides of human nature.

Both Freudians and existentialists are concerned with easing human suffering. Both blame society for preventing people from being true to their natures. In other areas the existentialists are very critical of Freud.

May outlines the disintegration of values in modern society. Values and goals are constantly questioned. In the 19th century individual competitiveness increased the prosperity of everyone. Today our competitiveness has become exploitive and created much interpersonal hostility.

To hide feelings of hostility, we've become a nation of joiners.

Because people have separated reason from emotion, they have come to view reason as good and feeling or emotion as bad. Excluding emotions has led to some poor decisions and resulted in a loss of faith in reason. This is evident in politics where a combination of reason and caring is needed, but only one of these two is used, leading to poor policies and voter disenchantment. We have also lost the sense of worth and dignity through feelings of powerlessness toward government and big business. May also feels we've lost all connection with nature. His last contention is that we have lost the ability to relate to others in a mature loving way. Sex has become confused with love, "In May's view, mature relationships are difficult to achieve and take time to develop. They involve a commitment to and concern for the welfare of the other person. Sex is the natural expression of affection and caring between people in this kind of evolving deepening relationship...In conclusion May feels that our sense of worthlessness leads to a loss of the sense of the tragic significance of human life" (Ryckman, 1993, p. 437).

We begin life physically dependent on our mother. As physical dependence lessens, psychological dependence increases. How we handle this psychological dependence largely determines whether we move toward maturity and

growth or remain dependent and let others make decisions for us.

May sees the dependency struggle as a power confrontation. In this battle for freedom there are several stages; the first is infancy with no consciousness of self. The next about age two is rebellion to establish inner strength. It is repeated during adolescence. Rebellion is defiance and rejection of parental and societal rules. In contrast, true freedom involves "openness, a readiness to grow; it means being flexible, ready to change for the sake of greater human values" (May, 1953, p. 159).

The third stage May calls ordinary consciousness of self. We can now see our errors and learn from our mistakes. We also assume responsibility for our actions. The fourth and last stage May calls the creative consciousness of self. We see the truth without distortion. This happens only occasionally and corresponds to Maslow's peak experiences.

Humanistic/Existential Contributions to this Study

Humanistic psychologists Maslow and Rogers hold a common belief that people strive to reach their full potential. May, the existentialist, describes true freedom as openness and a willingness to grow. The underlying beliefs of these three theorists tie in well with the Myers and Myers concept of gifts (Gifts Differing, 1990), the

special abilities each person has inherited or acquired through socialization. These special abilities are honed through the socialization process to the point that each person can grow to his/her fullest potential. For one individual that fullest potential may be as a carpenter or a wood carver, for another it may be as a teacher or stockbroker.

This striving to reach one's fullest potential takes into consideration all four indexes of the Myers-Briggs Type Indicator. Where an individual's energies come from, the Extraversion-Introversion index; how one learns, the Sensing-Intuition index; how one relates to others, the Thinking-Feeling index; and how one organizes information, the Judging-Perceiving index.

Cognitive, Behavioral and Social-Behavioristic Theories

This section opens with Kelly's Cognitive theory of personality, which is contrasted with Skinner's Behavioristic theory. These two opposing theories are then melded together in Rotter's Expectancy Reinforcement and Bandura's Social Cognitive theories.

George Kelly's Cognitive Theory

Kelly stands alone as an advocate of a pure cognitive theory of personality, focusing entirely on the ways information is processed. In his view people continuously

try to make sense of the world by forming hypotheses on how it works, testing and then revising them if they don't work.

Kelly's theory of cognition is based on the concept of constructive alternativism with a joint base of freedom and determinism. We each attempt to predict and control events. In building a system of personal constructs we interpret events and then use the constructs we've formed to deal with new experiences. For Kelly, "constructs are ways of organizing in terms of similarities and contrasts..." (Kelly, 1955, Vol. 1, p. 61). He believed that constructs were discriminations people make between different experiences, sometimes formulated before they could be verbalized.

According to Kelly core constructs are highly important in one's life. These are the beliefs that help maintain one's existence and are very resistant to change. As an example he cited a belief in God, a notion central to many people's lives, as a core construct. One's relationship to God and/or family affect every day decisions and remain stable. On the other hand peripheral constructs are easily changed as new information becomes available. Within one's cognitive world constructs are arranged hierarchically. Constructs also vary in the number of other constructs to which they are related. The good/bad dichotomy is used by many people, though not for all constructs. Tall/short and fat/thin are other examples of peripheral constructs.

Kelly further characterized constructs as preemptive, constellatory and propositional. A preemptive construct includes only its own elements and precludes those elements from being part of other constructs. This leads to black and white thinking and can be damaging to interpersonal relationships. A constellatory construct allows its elements to belong to other areas concurrently but fixes their area membership. Stereotypes belong to this category. Propositional constructs are open to construction in every respect. This allows flexible thinking. However, exclusive reliance on propositional thinking would immobilize one as he or she continually reevaluated experiences and is, as a consequence, unable to act.

Skinner's Operant Analysis

The initial work in operant analysis was done by John B. Watson who believed that the psychologist's task was to discover the link between environment and behavior. He believed in a stimulus-response (S-R) psychology. He declared that psychology was the study of observable behavior and references to private events were not worthy of scientific investigation.

B.F. Skinner agreed with Watson that psychologists should focus on behavior that is verifiable, but he also felt that internal private events should be considered if they could be measured objectively and reliably. The work

of Pavlov on conditioned reflexes was important to Skinner. He was also interested in Thorndike's work on "trial and error" learning. Skinner modified Thorndike's law of effect to explain the acquisition of behavior as influenced by reinforcing and punishing consequences.

Skinner believed somewhat half-heartedly, according to Ryckman (1993, p. 458), that psychologists must provide adequate explanations of private experiences. Although he recognized the importance of inner events, as a behavioral psychologist he tended to de-emphasize them in his analyses. He maintained that "major advances will occur only when psychologists focus on the ways in which behavior and external environmental variables are causally related" (Ryckman, 1993, p. 459).

The argument over free will versus environment is highlighted by people's fear that someone will be able to control them. If one believes implicitly that he is in complete control of himself he does not recognize the powerful influence of environment on his actions. For Skinner the study of personality involved finding the relationships between the organism's behavior and its reinforcing or punishing consequences.

Skinner devised a system of operant conditioning. It had three important components: (a) "The environmental or situational event in which a response or behavior occurs (that is the event that precedes the behavior); (b) the

behavior itself; and, (c) the environmental stimuli (consequences) that follow the behavior" (Skinner, 1953, pp. 108-109).

Skinner preferred to study personality by studying the learning of the many behaviors that allow the individual to optimally survive in his interaction with the environment. "In his view a single set of principles can account for much, though not all, of the behavior of both nonhuman and human organisms" (Ryckman, 1993, p. 476).

Bandura's Social Cognitive Theory

Albert Bandura believes that behavior occurs as a result of the interaction between the internal processes and environmental influences. Internal processes develop out of previous experiences of the individual and are measurable. "These mediating events are extensively controlled by external stimulus events and in turn regulate overt responsiveness" (Bandura, 1969, p. 10). Bandura sees cognitive events as actual causes of behavior.

Bandura posits a triadic reciprocal determinism in which cognitive, behavioral, and environmental factors interact and are determinants of one another. He sees us representing external events symbolically and using them as a guide to behavior. We can foresee the possible consequences of certain behaviors and act accordingly. Reinforcement is a major component of Bandura's theory. He

believes that reinforcers and punishers do not automatically strengthen or weaken behavior. Behavior is largely regulated by anticipated outcomes. We also learn our behavior by observation. Efficacy expectations come from personal mastery experiences. Success expectations tend to create high expectations, while failures tend to create low expectations.

Bandura sees personality development and modification largely as the result of social cognitive experiences. New behaviors are learned as children watch the behavior of adults. Imitating parents behavior is sometimes rewarded and at others punished. As a result, children learn to copy the behavior of successful models. Bandura believes the maintenance or extinction of behaviors depends on schedules of reinforcement. He also recognizes that constitutional factors influence the individual's social-learning.

Rotter's Expectancy-Reinforcement Value Model

Julian Rotter's theory of personality is based on learning concepts and principles. He maintains that most behavior is learned and is acquired through interaction with others. He stresses the unity or interdependence of personality, in which one's experiences and interactions influence one another. "Personality is seen as both changing because the individual is continuously exposed to

new experiences, and stable, because previous experiences affect new learning" (Rotter & Hochreich, 1975, p. 94).

Rotter sees human behavior as motivated and goal-directed. He finds no basic difference between needs and goals. Social learning theory believes in the law of effect. Initial learning occurs through need reduction, later more complex learning occurs through reinforcement.

Four major concepts underlie social learning theory: (a) behavioral potential, the likelihood of any behavior's occurring with reinforcement, (b) expectancy, the belief about some object or event, (c) reinforcement value, the degree of preference for any one group of reinforcements to occur if all reinforcements are equal, and (d) the psychological situation, the situation as seen by the person.

Two other concepts, freedom of movement and minimal goal, are a part of Rotter's theory. These concepts can be used in predicting behavior. Rotter believes personality development is dependent on the quality and diversity of a person's experiences with others. Parents are the important figures and they satisfy the child's physiological needs. The child relies on them for love and recognition and other reinforcers. Rotter thinks that stimulus generalization occurs toward teachers and other adults as the child works to secure their approval. He sees language playing a major role in the child's development. Words are cues in

directing behavior and serve as reinforcers. The origins of healthy or unhealthy behavior begin in the home. Parents who encourage behavior that leads to acceptance, love and identification with others produce healthy children. Next to the home, the school has the most effect on development. Children learn much from classmates as well as teachers.

Maladjustment in children comes from neglect and rejection. Overindulgence and over-protection also cause problems in school. Rotter sees the main role of the school as correcting unrealistic views of children and helping them to feel secure and set realistic expectations that will allow them to be fully functioning adults. "To help children grow into effective citizens, Rotter believes that parents, teachers, and others should be warm, accepting, good-natured, democratic, and consistent in their disciplinary practices" (Ryckman, 1993, p. 508).

Cognitive, Behavioral and Social-Behavioristic Contributions to this Study

Kelly maintained that people create constructs by which they predict outcomes and act on the environment rather than being passively acted on by the environment. He believed that individuals set goals for themselves and then attempt to fulfill them. Kelly's ideas of setting goals and working toward those goals are incorporated into two subtests of the Lifestyle Approaches Inventory (LSA) used in this study.

The Social-Behavioristic and Behavioral perspectives as represented by Rotter, Bandura and Skinner are clear, precise and readily testable, as well as being well grounded in data. Skinner saw behavior in terms of operant-conditioning. Though he gave lip service to self-report information, he did not accept it if it could not be recorded objectively.

Both Rotter and Bandura disagreed with Skinner about the role of cognition in personality functioning. They believed that cognitive terms in personality theories contribute much to the understanding of human behavior. Rotter's individual-difference measure of internal versus external (I-E) control of reinforcement has been widely accepted and used.

Bandura's social cognitive theory helps to bring the personality type theory of Jung together with the self-management and time-management approaches of the behaviorists. Bandura believes in internal processes influencing behavior, which is similar to Jung's definition of how people take in information (through sensing or intuition), and how they come to conclusions about that information (through thinking or feeling). For social behaviorists that internal process is what helps in selecting a goal, selecting self-messages that are supportive, and scheduling the tasks that need to be

accomplished, all part of self-management and time-management.

Bandura also accepts the effects of environmental influences. This coincides with Jung's concept of energy coming from being with people and exchanging ideas (the extravert-introvert index), as well as the evaluation of information through the reactions of others (feeling-thinking index). For the social behaviorists the environment is the major source of the stimulus to do things as well as the reinforcement for having done it right.

Self-Management and Academic Performance

A definition of self-management is essential to understanding the role of self-management in predicting academic performance. Self-management and related terms of self-directed or self-regulated learning are frequently confusing in the literature. Oddi describes them as "overlapping in some respects and differing subtly in others." She also refers to a "lack of a unified, comprehensive conception of and disagreement about the values and practices related to self-directed learning." She goes on to describe the plethora of terms used: "self-education, independent learning, self-teaching, self-instruction, individual learning, independent self-education, autonomous learning, self-directed inquiry, self-

initiated learning, andrologogical learning, and self-actualization" (1987, p. 21).

The initial use of the term self-control comes from B.F. Skinner's Science and Human Behavior (1953) where he offers the possibility that the individual may have some control over his own behavior. "The individual 'chooses' between alternative courses of action, 'thinks through' a problem while isolated from the relevant environment, and guards his health or his position in society through the exercise of 'self-control' (p. 228). Skinner goes on to explain that self-control is the result of changing the environment through nine specific procedures. These procedures included such things as physical restraint, stimulus control, manipulation of emotional conditions, operant conditioning, and punishment.

It was nearly 10 years after Skinner's (1953) work when researchers started to explore the role of self-control in behavioristic theory. Previous studies in behaviorism relied on a behavioral manager to change behavior, thus eliminating the need for self-managed learning. One of the first attempts to move away from the behavioral manager or outside source of control such as a parent, teacher, counselor, or psychologist to a source controllable by the client was reported by Ljunberg Fox (1962). His analysis focused mainly on the control of study habits, which he believed affect not only academic performance but personal

adjustment as well. He concluded that "the products of poor study habits are both cause and consequence of much of what is called 'personal maladjustment'" (P. 85-86).

Fox believed that effective study demands an analysis of study habits and those behaviors that compete with studying. According to Fox's analysis of study habits, the fundamental issue is how to bring the student's initiation of studying under stimulus control. Students may acknowledge that studying is important but still not engage in study activities that would benefit them. To illustrate his point, Fox writes:

> It is one thing to convince a student that recitation is the essential mechanism of learning, it is another to get him to outline the chapter while sitting on a closed book. Recitation is hard work, and its worthy consequences seem distantly related; the reinforcers of this hard work are considerably delayed. And even if the student has mastered an effective technique, there remains the problem of getting him to study in the first place. This, then, is the first problem facing us: how to provide the conditions that will place the initiation of study by students under effective stimulus control. All other developments come to nothing if the control of this first step is missing. (p. 87)

In Fox's pilot work volunteers were sought from college freshman and sophomore students. Volunteers were told that the experimenter "had a method that would require them to study only in the day time and would lead to an improvement in grades" (p. 87). Five students from the volunteer group were chosen, two above the college achievement average and three below the average. Fox was able to bring the initiation of study under the control of a specific stimulus, a little-used room in the library. He was also able to make each study occasion an effective stimulus for studying only. Any daydreaming, thinking about social activities, or other non-study behavior was the stimulus to do one more problem or read one more page and then leave the room. The results of this study were promising, with each student improving at least one letter grade and one improving four letter grades.

Ten years after Fox's pilot study on self-control, Watson and Tharp (1972) reviewed the literature to date and proposed what they described as the five characteristics of self-modification: (a) It concentrates on behaviors, (b) it applies the laws of learning, (c) there is a heavy emphasis on positive reinforcement, (d) if possible, the project is planned so that the new learning occurs in real-life situations, and (e) the person attempting self-modification designs and executes his own program.

Mahoney and Thoresen (1974) have underscored the difficulty in defining self-control. "The term self-control has meant many different things to different people. Its most popular synonym, by far has been 'willpower'--a vaguely defined inner force" (p. 20). Although not precisely defining self-control, Mahoney and Thoresen have described the processes that lead to self-control: "The specification of a behavior, the identification of its antecedent cues and environmental consequences, and the implementation of an action plan that alters some of these antecedents and/or consequences" (p. 20).

Thoresen and Mahoney (1974) have also offered something of an operational description of self-control: "A person displays self-control when in the relative absence of immediate external constraints, he engages in behavior whose previous probability has been less than that of alternatively available behaviors" (p. 12). They then go on to simplify this description, stating: "a 'self-controlling' person engages in responses that have been relatively unlikely in previous situations" (p. 14).

Kanfer and Grimm, while not specifically defining self-control, state that "self-regulatory techniques should enable individuals to maintain some consistency by adherence to self-generated standards, even in the face of changing environmental models and contingencies" (Craighead et al. 1976, p. 459).

Stuart had used the term self-management in the title of his text Behavioral Self-Management (1981), but it was Karoly and Kanfer who moved the concept of self-management toward representation of a lifestyle. "Self-management requires more than a temporary change in setting conditions or the acquisition of specific strategies" (1982, p. 23). In comparing self-control to self-management they described self-control as a noun, something one has or doesn't have, while self-management is an adjective forcing us to focus on the actions of the individual. They proceed to a definition of self-management, which they point out "while covering a wide range of processes, generally signifies the gradual assumption of control by the individual over cueing, directing, rewarding, and correcting his or her own behavior" (p. 576). They continue, "The term suggests active client participation in goal selection and evaluation, in attention to internal and external responses, and in the use of cognitive processes to increase adaptive effectiveness" (p. 576).

In a study using self-management techniques Dean, Malott, and Fulton (1983) recruited psychology students for a self-management training program by offering 5 bonus points (out of 450 total course points) and the opportunity to learn useful self-management skills. In the first experiment the researchers provided self-management training for nine student volunteers whose median quiz score was 70%

(range 58-81). The training consisted of six one-to-one meetings with a researcher.

During the first meeting the volunteers accomplished three things: (a) they made a list of personal and career goals related to their school work; (b) they made a list of additional positive outcomes or reinforcers that might result if they did well; and (c) they listed undesirable outcomes that could result from poor academic performance (p. 78).

In the second meeting the volunteers were taught how to self-monitor and record, graph performance and prepare schedules. The third meeting consisted of making a list of behaviors and events that interfered with studying and then making a list of changes to be made in their study environment. The fourth meeting included training in prioritizing a list of academic and non-academic tasks they needed to complete daily. The fifth and sixth meetings were used to reinforce the previous training and to answer any questions the volunteers might have about their training.

As a result of this training, the volunteers had an average improvement of one full letter grade. Baseline median scores of 70% (range 58-81) from the first seven weeks of the semester were improved to 88% (range 72-100) over the last 8 weeks of the semester.

Dean, Malott and Fulton (1983) followed up this study with a second experiment using six low-performing psychology

students. The six students were first taught only the hourly self-recording technique; as a result, three of the students raised median quiz scores from 66, 80, and 78 before training to 100, 91, and 93 respectively after training. The other three did not significantly improve their median quiz scores.

The three who did not improve their quiz scores were then taught the second technique of student-constructed rule statements, but again did not improve their quiz scores. Consequently, the third technique of environmental management training was implemented, at which time the three remaining students raised their median quiz scores from before training of 68, 79 and 84 to 82, 100 and 95 after training. Self-management training in this study not only improved grades, but led to some durable behavior change, as the majority of participants maintained self-management procedures several months after training had ended.

Self-management was further defined by Williams and Long (1991) to include five specific practices: (a) Selecting a goal, (b) assessing progress toward that goal, (c) developing a supportive environment for reaching the goal, (d) using self-messages that are supportive of reaching the goal, and (e) implementing maintenance strategies. The five practices or processes used in the Williams and Long model could be applied not only to academics, but to all aspects of one's life.

The term self-management as used by Dean, Malott and Fulton (1983) included many of the Williams et al., processes, but it limited those processes to academics. They included (a) list-prioritizing (goals), (b) schedule-planning, (c) self-recording, (d) graphing (assessing progress), and (e) environmental management (developing a supportive environment).

Zimmerman (1986) used the term self-regulated learning to represent self-control procedures, but many of his recommended learning strategies fall within the scope of what others have labelled self-management. "These strategies included self-evaluation, organizing and transforming, subgoal setting and planning, seeking information, keeping records and self-monitoring, environmental structuring, self-consequences, rehearsing and memorizing, seeking peer, teacher or adult assistance, reviewing notes, tests, or text books" (p. 308).

In his analysis of self-regulated learners, Zimmerman described such students in the following terms:

> Metacognitively, self-regulated learners are persons who plan, organize, self-instruct, self-monitor and self-evaluate at various stages during the learning process. Motivationally, self-regulated learners perceive themselves as competent, self-efficacious, and autonomous. Behaviorally, self-regulated learners

select, structure, and create environments that optimize learning. (p. 308)

The term self-directed learning is used by Johnson, Sample and Jones (1988) in their comparison of self-directed learning and personality type, but they use Caffarella and Caffarella's 1986 definition of self-directed learners as: "Individuals who are able to plan, implement, and evaluate their own learning experiences without the assistance of others" (Johnson, Sample & Jones, 1988, p.33). Again there is a lot of overlap between the definitions, though the descriptive terms have changed.

Thomas (1988) changed the descriptive term even further in his description of the "proficient student." He characterized proficient students as being goal oriented; using information to select processing strategies; evaluating readiness by self testing; working efficiently; monitoring their progress; initiating and regulating required tasks; encoding, transforming, and personalizing material; managing their time well; structuring their environment to exclude distractions; and having a sense of personal efficacy.

The above studies use different wording but the final analysis shows many overlapping constructs that can be subsumed under the label of self-management. In the current study, the term self-management will be used to represent the cognitive and behavioral self-reports of practices

individuals use to manage their daily lives as measured by the Lifestyle Approaches Inventory (LSA).

It seems likely that effective self-management is essential for academic success. Students who do not finish papers on time, who don't allow time to study for exams, or who can't find needed materials because of the disorganized setting in which they work are not likely to be successful in college.

Though self-management appears to be a necessary skill for successful college completion, it is not always clear how students learn these personal management skills. In her text Educational Psychology (1993), Anita Woolfolk describes learning as a change brought about "by the interaction of a person with his or her environment" (p. 196). Thus, the basic question is what types of environmental experiences promote the development of self-management skills.

Thomas (1988) describes the ideal classroom to support self-managed learning. He lists five course characteristics: "(a) Explicit statement of the criterion, expectations and standards, (b) presence of appropriate cognitive challenge, (c) demands and supports for the transformation or integration of course content, (d) latitude for self-direction, and (e) supportive climate which includes an absence of stress factors and supports for efficacy" (p. 266).

Of the various self-management skills that seem to affect academic performance, time management skills appear to be among the most frequently emphasized (Gall, 1988; Longman & Atkinson, 1988; Walter & Siebert, 1981). In assessing the relationship between time management, academic performance, and stress, Macan, Shahani, Dipboye, and Phillips (1990) identified four independent factors in time management: (a) Setting goals and priorities, (b) scheduling and planning, (c) perceived control of time, and (d) preference for disorganization. All four factors were related to the postulated outcome variables of stress and performance, but the greatest correlation was with factor three, perceived control of time. This one factor was significantly correlated to all eight outcome variables, accounting for more prediction of performance than the other three factors combined.

Time management studies have looked at the relationship between time management and stress (Macan, Shahani, Dipboye, & Phillips, 1990), time management training and time management behaviors (Hanel, 1981), and time management training and time spent in stress reducing activities (Hall & Hursch, 1982). But this researcher could find few studies that linked time management to academic achievement.

One of the few studies that did assess the relationship between time management and college grades over a four year period was done by Britton and Tesser (1991). Their study

used the theoretical model of time management practices developed by Britton and Glynn (1989). The Britton and Glynn model incorporated many of the ideas from earlier self-management models. These included goal oriented, regulating tasks, and managing time from Thomas's (1988) "proficient student", and planning and implementing from Cafarella (1986). The Britton and Glynn model specifies several time-management components: "Choosing goals and subgoals, prioritizing the goals, generating tasks and subtasks from the goals, prioritizing the tasks, listing the tasks on a 'to-do' list, scheduling the tasks, and then carrying out the tasks" (p. 405).

Britton and Tesser (1991) developed a questionnaire around the Britton and Glynn (1989) model and administered it to ninety male and female freshmen and sophomore undergraduates enrolled in an introductory psychology class at the University of Georgia. Four years later the researchers obtained the cumulative grade point average for these students from college records.

The results over the four year period indicate that the SAT, upon which many colleges rely heavily for selection of applicants, accounted for 4% of the variance and was a nonsignificant predictor of grade point average. In contrast, time attitudes and short-term planning accounted for 21% of the grade point variance. These results would

suggest that there are better predictors of success in college than the present pre-college testing program.

It appears that the very nature of studying requires self-direction. At the college level studying is normally done through self-initiation, with the amount of studying and level of intensity set by the student. How well students regulate their study time and study activities would seem to be related to their generic self-management skills.

Personality Type and Academic Performance

The second issue to be addressed in this study is the linkage between personality type and academic performance. An offshoot of personality theory was the personality type theory of Carl Jung. This is not a total personality theory, but an attempt to type or classify people. In his original 1921 text Psychologische Typen, Jung discussed differences that are readily evident in people, such as shyness on the one hand and gregariousness on the other. Jung stated that the average person is inclined to regard differences in personal behaviors as peculiarities of character. But those who possess a more thorough knowledge of people know that observable behaviors are not isolated actions, but rather reflect underlying character attitudes.

Jung's theory of personality type specifically addresses how people take in information and how they process that information; in other words how different personality types learn. Jung's type theory gave orderly explanations of differences in personality types. These explanations reflect Jung's belief that everyone uses four basic processes.

Jung used the term perception to describe the way people take in information. The two processes included in perception are sensing (S) and intuition (N). He uses the term judgment to describe the way people come to conclusions about the information they have taken in. The two processes included in judgment are thinking (T) and feeling (F).

Jung also described an orientation toward life that he called an introverted (I) or extraverted (E) attitude. The extraverted attitude has an awareness and reliance on the outside world for stimulation. The introverted attitude concentrates on the inner world of concepts and ideas.

What does Jung's theory of personality type, or Isabel Myers' interpretation of his theory, have to do with predicting academic performance? The MBTI is the instrument that links the personality type theory of Jung to measurable human functioning as interpreted and expanded by Isabel Myers. Isabel Myers combined Jung's concepts of judgment (J) and perception (P) to form an additional scale, which relates to the planning or spontaneity of one's

orientation to life events. This dimension and the other three dimensions of the MBTI are discussed and illustrated in the MBTI Manual (Myers & McCaulley, 1985, p. 2).

An examination of the MBTI scales suggests that certain personality types should be associated with success in school. On the first scale, E-I, the extravert may be more easily distracted by his attitude toward the outside world. Social events, friends, and anything external may have priority over studying. The second scale, S-N, is probably one of the strongest academic predictors. Because sensing individuals take in information through the senses, they are more aware of the present moment, the reality or practicality of the here and now; they are often not comfortable with reading because of the requirement to transform symbols into meaning, an intuitive process. The intuitive type on the other hand not only enjoys the cognitive processing involved in reading, but is able to continually apply future possibilities to new information.

The third scale, thinking-feeling, appears to academically favor the thinking function. The thinking type makes impersonal logical connections, critical and objective decisions. The feeling type on the other hand relies more on personal and group values for decision making. The decisions of feeling types are much more subjective. Because feeling types are more attuned to the values of others, they tend to be very aware of teacher expectations,

thus compensating for their less logical approach to academic tasks. This scale has shown little or no academic differences between the thinking-feeling functions in past research.

The final scale, J-P, favors the judgment type to be successful in school. The judgment type is organized and seeks closure. On the other hand, the perceptive person is so open to new experiences and spontaneity of actions that tasks and school projects may not be completed in a timely fashion.

In their evaluation of educational research in preparation for the Myers-Briggs Manual, Isabel Myers and Mary McCaulley compared the 16 types in relation to aptitude, application, interest and academic performance. They found that I's on the I-E scale, N's on the S-N scale and J's on the J-P scale did better academically than their counterparts. F's on the T-F scale appear to be more attracted to liberal arts, but there is no empirical data to say that either preference is significantly better academically. Research since the publication of the Manual in 1985 further supports these findings.

Other researchers have also found relationships between the Myers-Briggs dimensions and academic performance. For example, the MBTI was used in the Kalsbeek (1987) TRAILS (Tracking Retention and Academic Integration by Learning Style) study to do the following: (a) describe the academic

population, (b) compare type and traditional measures of academic aptitude, (c) compare type and academic achievement, and (d) compare type and attrition. From this longitudinal study at St. Louis University the following conclusions were made: (a) "the Sensing-Intuition scale has the strongest relationship with aptitude test performance and the analysis suggests that the stronger the preference for Intuition, the higher the college aptitude score" (p. 46), (b) "the greater the preference for intuition, ...introversion, and ...judgment, the better the GPA" (p. 49), and (c) attrition was not related to personality type except in the nursing program where although "students with a preference for thinking comprise about 26 percent of the nursing students group as a whole, they comprise 40 percent of the nursing dropouts" (p. 54).

Judith Provost (1985) administered the MBTI to 401 incoming freshmen and tracked their academic work through their senior year. From this longitudinal study she concluded that (a) the types with the highest GPA all had judgment preferences and (b) three of the four types containing a high percentage of borderline students had a perception preference.

In trying to discover why intuitives, as reported by Myers and McCaulley (1985), have better grades as well as higher achievement and motivation test scores than sensors, Dunn (1985) administered the MBTI and a learning and recall

test to 34 upper division volunteers. He found no differences in memory ability between the two types, thus leaving the differences in academic and IQ test performance open to other possible explanations such as motivation or other cognitive abilities.

Studying the relationship between the MBTI and first year achievement in college, Schurr and Ruble (1986) found that intuitives and introverts had higher aptitude scores (as measured by the SAT) and higher achievement scores (as measured by course grades) than sensors or extraverts. Judgers and perceivers had similar aptitude scores, with perceivers scoring slightly higher in this study, but judgers tended to earn higher grades.

Following up their earlier work with first year students, Schurr, Ruble and Henriksen (1988) tested sophomores on the MBTI and compared not only type and GPA, but type and major with GPA. They found that ESs (lower GPAs in the 1986 study) "tended to attain relatively higher grades in courses identified as more practical, concrete, and applied, whereas INs tended to attain relatively higher grades in courses identified as being more abstract and theoretical in nature" (p. 57). In their 1989 study, as was found with the earlier studies, judging types consistently achieved higher grades than perceiving types. The retention rate in this study was also very much related to the fit between academic major and personality type.

Anchors, Robbins, and Gershman (1989) replicated Provost's (1985) earlier longitudinal study of the association between the Myers-Briggs types and persistence to graduation. Their study found that students with a preference for introversion had higher GPAs than those with a preference for extraversion, and judging types had higher GPAs than perceivers. Anchors et al. found ESFPs and ESTPs to be high persisters to graduation. They also found that SAT scores prior to matriculation were not related to type differences in GPA. This study, the Provost (1985) study, Kalsbeek's (1987) study, and Tinto's (1987) study all indicate that persistence may be affected by variables such as student-institutional fit and student-major fit, as well as by personality type. Although no one personality characteristic is clearly related to persistence, there are some indicators of a relationship between GPA and personality type.

The above cited studies covering five years of research done by different investigators in different locations and different types of schools all arrived at similar conclusions about personality type and GPA. Three of the four bipolar scales on the MBTI are related to academic performance. Persons scoring as I in the extraversion-introversion scale, N in the sensing-intuition scale, and J in the judgment-perception scale all performed significantly better academically than did their counterparts. These

results all support the theoretical framework of the MBTI as described by Isabel Myers.

Self-Management and Personality Type in the Prediction of Academic Success

When assessment of self-management is coupled with assessment of personality type, the potential for predicting academic success could be increased. A review of the previous literature on self-management and a review of the literature on personality type shows some strong linkages between the two.

Zimmerman (1986) described the behavioral characteristics of self-regulated learners as those who select, structure, and create environments conducive to learning. The judging characteristic of the MBTI fits this description well; judging individuals like organization, they remove the distractors from their study area, and they prefer closure so they complete all work initiated.

Zimmerman also describes 14 categories of self-regulated learning strategies, several which sound like the judging characteristic. His categories of organizing, subgoal setting and planning, and environmental structuring all fit the judgment preference. His category of transforming fits the intuitive type on the S-N scale.

Both the judgment and intuitive scales have been significantly correlated with GPA.

Self-management and personality are further linked in Oddi's (1987) literature review on self-directed learning. Her review reveals two perspectives on self-directed learning. The first view is that self-directed learning is a process, a cognitive-behavioral approach, and the second view is that self-directed learning is a result of personality characteristics that are automatic character responses to the environment over which the individual has no conscious control. The process view underscores important skills needed in self-directed learning such as setting personal goals, identifying resources, and evaluating success. Smith (1982) lists the ability to chart one's own learning style, lead discussion groups, and use intuition as skills needed for self-directed learning. Smith's mention of intuition again suggests that certain personality characteristics may be linked to success in self-directed learning.

Skager (1978) and Smith (1976) in their literature reviews also emphasize the role of initiative and persistence in self-directed learning. Houle's (1980) model of self-directed learning describes three overlapping modes: (a) instruction, (b) inquiry, and (c) performance. Houle includes in his performance mode the role of reinforcement and role models, as well as the process of internalizing

ideas, a description which fits the intuitive personality dimension.

The goal of education is to produce an "inner-directed, self-operating learner" (Knox, 1973, p. 47). The introversion side of the I-E scale of the MBTI uses the same description, inner directed, and is another one of the personality dimensions showing a positive relationship with GPA (Myers & McCaulley, 1992, p.104).

Johnson, Sample, and Jones' (1988) research with adult degree students further supports the linkage between self-directed learning and personality. Johnson et al. administered the MBTI and the Self-Directed Learning Readiness Scale (SDLRS) to 76 adult degree students. They found significant differences in SDLRS scores between sensing and intuition preferences, as well as significant SDLRS differences between judging and perceiving preferences.

In Johnson's et al. study intuitives were much more likely to have high SDLRS scores than were sensors. None of the intuitives had below average SDLRS scores, while one-fifth of the sensors did. The judgers also scored significantly higher than perceivers on the SDLRS, while having only one third the number of subjects in the below average category. The E-I and T-F scales of the MBTI had no significant relationship to readiness for self-directed learning.

Potential of this Study

The introduction to this chapter referred to our present system of college admissions where 40% to 60% of those admitted to college do not graduate. The present system uses high school grades and academic aptitude (ACT or SAT) as the primary measurements for college admission selection, and yet these measurements have been found to be adequate only for above average students.

Studies have shown up to 46% of the variance in college GPA comes from factors other than high school GPA and pre-college aptitude scores (Kanoy, Wester & Latta, 1989). The traditional college predictors of high school GPA and ACT or SAT were nonsignificant contributors to the prediction of grades for those students who were anticipated to be average or below. In a four year study at the University of Georgia (Britton & Tesser, 1991), the SAT accounted for only 4% of the variance in GPA and was a nonsignificant predictor of GPA.

Of the 16 major personality theorists reviewed in this chapter each one of them makes some reference to learning. They vary from theorist to theorist, but include such terms as "information input" and "information processing," "fulfillment of potential," "maturation and learning," "cognitive processes," "cognitive behavior," "cognitive understanding," "reason in solving problems," and "learning concepts." If we can isolate the personality variables that

affect learning, then the potential for accurate academic prediction is increased. Adding the skills of self-management and time-management, which appear to be inherently necessary for academic success, would seem to increase the potential for predicting academic performance.

Hypotheses

The generic constructs of self-management, time-management, and personality appear to have some conceptual and empirical linkage to academic performance. Because these constructs may also be conceptually related to each other, combining the constructs may yield stronger predictions of academic performance than using them as singular predictors of academic performance.

Specifically, the current study uses two measures of self-management/time-management and one measure of personality to predict academic performance in a course designed to be highly self-directing. The anticipated results are described as follows:

1. Combining self-management, time-management, and personality dimensions will yield stronger predictions of academic performance than will each measure taken separately.

2. Combining self-management, time-management, and personality measures with traditional predictors of academic performance (i.e., ACT, GPA) will yield stronger predictions

of performance in the self-directed course than will the traditional predictors by themselves.

3. Partialling ACT and GPA out of correlations between the psychological variables (i.e., self-management, time-management, and personality dimensions) and performance measures in the course will improve the predictive potential of the psychological variables.

4. Partialling social desirability out of correlations between the psychological variables (i.e., self-management, time-management, and personality dimensions) and performance measures in the course will improve the predictive potential of the psychological variables.

5. Students who score one standard deviation above the normative means on the self-management and time-management measures will obtain significantly higher GPAs and performance measures in the course than those who score one standard deviation below the normative means.

6. Myers-Briggs types that have an I, N, and J will obtain higher academic performance measures than those having an E, S, and P.

CHAPTER III

METHOD

Subjects

Two hundred and ninety-six students from a large state university enrolled in the Psychoeducational Issues in Human Development courses taught during the Fall 1992 semester and Spring and Fall semesters of 1993 were invited to participate in this study, with approximately 98% doing so. The course is offered at the sophomore level, but participants ranged from freshman through graduate level. The students included 233 females and 57 males. Student ages ranged from 18 to 53, with the majority of students between ages 19 and 23.

The course was taught twice during the Fall 1992 semester, with about 40 students in each section, once during the Spring 1993 semester with 75 students in that section and twice during the Fall 1993 semester with about 75 students in each section. All sections were taught in such a way as to maximize self-directed learning, with the same syllabus being used for all classes.

Procedure

At the first class session the course syllabus was handed out, and the instructor stressed that this course would focus on developmental issues important to educators, not general human development. Those students needing a general course in human development were invited to register for another course.

The remaining students were then invited to participate in a research project designed to determine how well this course format works for students with different characteristics. It was explained that their grade would not be affected by their participation or lack thereof, but that they were encouraged to participate.

At the third class session in the Fall 1992 and Spring 1993 classes two self-report questionnaires were administered: a self-management inventory and a measure of personality. Near the end of the course, a social desirability inventory was also administered to all participants. At the third class session in the Fall of 1993, a time management inventory was added to the battery of inventories administered. Students were directed to put only the last four digits of their social security number on the portion of the inventories returned to the research aides. They were instructed that their responses would not

affect their grades and that they should answer each item as honestly as possible.

It was explained at the beginning of the course that attendance was optional except for research, unit quiz, and final exam days. Attendance was taken by research aides for purposes of the study, but in no way counted toward student grades.

Class Design

The class material was divided into five sections with a quiz at the end of each section and a final exam. Each section included three or four videotape presentations, two days of questions and answers, one day for the quiz and one day for the feedback on the quiz. Each video was followed by an opportunity for questions immediately after the showing. Students were also allowed to view these tapes on their own whenever they wished.

On question and answer days students were asked to submit questions on 3X5 cards (one question per card, but as many cards as they desire). When all written questions were answered, if there was still time, questions could be asked from the floor. Students were not required to attend, could leave when their questions were answered, or could stay for all questions. The class period following the mandatory attendance for the quiz was the feedback session. Quiz

scores were passed out at the start of the class. Students had the option of not attending at all, leaving when they got their quiz score, staying for the coverage of the questions they missed, or staying for the complete feedback.

The final exam had only one question and answer day before it. All unit quizzes included 30 items, and the final exam 50 items. A handout of study questions covering the readings and the videotape presentations was available for optional purchase along with the required text.

Records were kept on over one hundred thirty-six variables for each student. These included such variables as GPA, sex, quiz scores, class attendance, class participation, and personality type.

Instruments

Four questionnaires were used in this study. The Lifestyle Approaches inventory (LSA) was used to measure self-management; the Time Management Questionnaire to measure time-management skills; the Myers-Briggs Type Inventory (MBTI)to assess personality variables; and the Marlowe-Crowne to measure students' tendencies to answer with socially approved responses.

Lifestyle Approaches (LSA)

The LSA is a self-management inventory based on the Williams and Long (1991) text Manage Your Life. The text itself evolved from twenty years of self-management research literature. Williams and Long break down the theme of lifestyle organization into "defining goals for oneself and then systematically using cognitive and behavioral strategies to reach these goals" (Williams, Pettibone, & Thomas, 1991, p. 4). The LSA is comprised of four factors:

> Factor 1, performance focus and efficiency, reflects self-reported skill in judging what is important to do at any given time and then maintaining concentration on that task until it is completed. Factor 2, goal-directedness, represents individuals' perceptions of whether their actions are guided by clearly defined priorities and goals. Factor 3, timeliness of task accomplishment, relates to the self-reported tendency to initiate work on a task and move through that task in a timely fashion. Factor 4, organization of physical space, measures the extent to which individuals report keeping their work and living space organized, clean and attractive. (Williams, Moore, Pettibone, & Thomas, 1992, p. 12)

The concurrent validity of the LSA has been excellent, with 52 of the 56 predicted relationships with comparison

variables attaining significance at the .01 level and 46 of these at the .0001 level. Self-efficacy, life satisfaction, purpose in life, physical health status, and health habits were all positively correlated with most LSA factors, while external locus of control and perceived stress were negatively correlated with most LSA factors (Williams et al., 1992).

The convergent validity of the LSA was assessed by comparing it with Rosenbaum's (1980) Self-Control Schedule (SCS) and Brandon, Oescher, and Loftin's (1990) Self-Control Questionnaire (SCQ). These comparisons yielded an LSA total score correlation of .68 with the SCS and .69 with the SCQ.

A one week test-retest yielded reliability scores varying from .65 to .90, with the composite LSA reliability score being .90 (Williams et al., 1992). The internal consistency for the LSA, as assessed by Cronbach's alpha, ranged from .60 to .71 for the four factors and was .81 for the composite.

Time Management Questionnaire (TMQ)

The TMQ is an 18 item self-report instrument based on Britton and Glynn's (1989) model of mental time management. The Britton and Glynn model listed numerous time-management components: "Choosing goals and subgoals, prioritizing the goals, generating tasks and subtasks from the goals, prioritizing the tasks, listing the tasks on a 'to-do' list,

scheduling the tasks, and then carrying out the tasks" (Britton & Tesser, 1991, p. 405).

Britton and Tesser (1991) applied the Britton and Glynn model to a three factor questionnaire (TMQ). The three factors are: (a) Short-Range Planning--planning within the day or week, (b) Time Attitudes--having a sense of control over one's time, and (c) Long-Range Planning--setting goals for the full term, keeping dates on a single calendar, reviewing materials, and completing major assignments without a last minute rush. The TMQ's 18 questions are scored on a 5 point Likert type scale with response choices ranging from always (5 pts.) to never (1 pt.).

The student sample (N=90) used in the development of the questionnaire were freshman and sophomores enrolled in an introductory psychology course. Ninety percent of the subjects were white and 10% ethnic minorities.

A regression analysis of the results revealed Time Attitudes to be the strongest predictor of grade point average (GPA) (.15), Short-Range Planning the next strongest predictor (.06), and SAT a slightly weaker predictor (.05). The Long-Range Planning component was not significantly correlated to grades.

Putting the SAT score into the equation first resulted in the SAT accounting for only 4% of the variance, a nonsignificant relationship, while the Time Attitudes and Short-Term Planning components revealed significant

relationships accounting for 21% of the predictive variance in GPA.

Test-retest reliabilities were not conducted during the initial development of the questionnaire, but were conducted later by Verbal (1994) in his dissertation. The results of his study yielded a .78 correlation over a two week period.

Myers-Briggs Type Indicator (MBTI)

Currently, there are several instruments available for measuring personality, including the Omnibus Personality Inventory, the California Personality Inventory, the Minnesota Multiphasic Personality Inventory, the 16 PF, and the Myers-Briggs Type Indicator. For this study, the Myers-Briggs Type Indicator (MBTI) was chosen as the measure of personality, because it does not include self-management or time-management as a part of the scale, and is short enough to administer in one class period.

The MBTI is a personality inventory originating in the theories of Carl G. Jung in his 1921 book, Psychologische Typen. Katharine C. Briggs and her daughter Isabel Myers then attempted to put his theories to practical use in the MBTI in the form of four bi-polar scales. These scales are: (a) E-I--Extraversion, interest in the outer world of people and things, vs. Introversion, interest in the inner world of concepts and ideas; (b) S-N--Sensing, perception of

information through the five senses, vs. Intuition, perception of meanings and possibilities through insight; (c) T-F--Thinking, judging information logically and impersonally, vs. Feeling, judging information through personal values and others' responses; and (d) J-P--Judging, making decisions and putting things in order, vs. Perception, remaining open, curious, and spontaneous (Isachsen & Berens, 1991).

Construct validity has been approached from the premise that if an individual has a definite typology it should be recognized by individuals or by close friends. Bradway and Detloff (1976) had Jungian analysts type themselves and then compared their typing to their MBTI scores. The E-I scale showed 100% agreement, the S-N scale 68% and the T-F scale 61%. The J-P scale was not done. Stricker and Ross (1962) compared MBTI scores to peer ratings and found significant agreement on all scales. The correlations were .56 for E-I, .57 for S-N, .55 for T-F, and .52 for J-P.

Harrison (1976) familiarized psychology graduate students with Jung's typology and had them interview subjects and determine type. The graduate students' determination of type from a brief interview did not correlate significantly with the MBTI determination of type. Cohen, Cohen, and Cross (1981) designed a construct validity study using married couples to clarify the previous conflicting results. The MBTI and spousal ratings were

correlated significantly at the .01 level or above for the E-I, T-F, and S-N scales. The J-P scale was not significantly correlated.

Carlyn (1977) did an extensive review of the MBTI intercorrelation, reliability, and validity studies. In Carlyn's review of the four scales of the MBTI, three of the dimensions of personality appear to be relatively independent. These were the E-I, S-N, and T-F scales. The J-P scale appears to be related to the S-N or T-F scales, which fully supports Jung's hypothesis.

Carlyn reports internal consistency reliability of continuous scores to range from .76 to .82 (E-I), .75 to .87 (S-N), .69 to .86 (T-F), and .80 to .84 (J-P). Test-retest reliability scores for continuous scores ranged from .48 to .83, with female scores being more consistent than males.

Johnson (1992), following up 74 former clients of a human resources and management development consulting firm after 30 months, found continuous preference scales to have strong test-retest reliability on the E-I, S-N, and J-P dimensions (.79 to .83) and a moderate correlation on the T-F scale (.62). He postulated that the use of college students in earlier studies may explain some of the variation in test-retest reliabilities.

Convergent validity was supported by data from Stricker and Ross (1962), who compared the Gray-Wheelwright questionnaire scales (also designed to measure Jung's

typologies) to the MBTI for 47 male college students and found a .79 correlation for the E-I scale, .58 for the S-N scale, and .60 for the T-F scale.

Tzeng, Outcalt, Boyer, Ware, and Landis (1984) in studying the item validity of the MBTI found that empirical factors matched the theoretical scales almost perfectly. The correlations between the dichotomous poles were -.84, significant at the .001 level.

The Marlowe-Crowne Social Desirability Scale (MC)

MC is a result of Crowne and Marlowe's criticism of the Edwards Social Desirability Scale (SD) as confounding psychopathology with social desirability by using items from the Minnesota Multiphasic Personality Inventory (MMPI). They also preferred the broader definition of social desirability as "the need of Ss to obtain approval by responding in a culturally appropriate and acceptable manner" (Crowne & Marlowe, 1960, p.353). They developed a 33 item true-false questionnaire without the psychopathological content from the MMPI. Comparing the Edwards and Marlowe-Crowne by using confirmatory maximum likelihood factor analyses, O'Grady (1988) concluded that the two instruments are in fact measuring different concepts of social desirability. Test-retest reliability for the MC is reported as .89 and internal consistency as .88 (Crowne & Marlowe, 1960).

In-Course Performance Measures. In-course performance was measured by five unit tests and a comprehensive final. Other data such as class attendance and class participation were collected to determine if there was a correlation between these types of student behaviors and total points in the self-directed course. However, total points earned and course grade were determined solely by multiple-choice exams over the material covered in the course.

CHAPTER IV

RESULTS

Introduction

The results of this study are divided into four sections: relationship between self-management factors and academic performance, relationship between time-management factors and academic performance, relationship between personality variables and academic performance, and the best combined predictors of academic performance. The best combined predictors were determined by including self-management, time-management, and personality variables that were significantly correlated with each academic measure in a stepwise regression analysis for that academic measure. The specific data and analytic procedures used in testing the hypotheses are described below.

Hypothesis 1--The relationship of self-management, time-management, and personality dimensions to academic measures (e.g., ACT scores, overall GPA, and total credit earned in the Ed Psych 210 course) was first assessed via correlational analyses. The psychological predictors that were significantly ($p < .05$) correlated with one or more academic measures were then combined into a stepwise multiple regression analyses to determine what combination

of self-management, time-management, and personality dimensions best predict academic performance measures.

Hypothesis 2--The psychological variables that entered the regression equation in the data analysis related to hypotheses 1 were then combined with ACT and GPA in a stepwise regression analysis to determine the strongest combination of predictors of performance in the self-directed course.

Hypothesis 3--The correlations between the psychological variables (i.e., self-management, time-management, and personality dimensions) and performance measures in the self-directed course were computed with ACT and GPA partialled out of the correlations. The magnitude of these correlations was compared to the same correlations (computed for hypothesis 1) without the ACT and GPA partialled out.

Hypothesis 4--The correlations between the psychological variables (i.e., self-management, time-management, and personality dimensions) and performance measures were computed with the Marlowe-Crowne partialled out of the correlations. The magnitude of these correlations was compared with the same correlations (computed for hypothesis 1) without the Marlowe-Crowne scores partialled out.

Hypothesis 5--A series of t-tests was used to compare students who scored one standard deviation above the

normative mean on self-management or time-management with those who scored one standard deviation below the normative mean on self-management or time-management on the following dependent measures: ACT, GPA, and total points in the self-directed course.

Hypothesis 6--Academic measures were also compared across the Myers-Briggs 4-letter types that had a sufficient N to permit analysis of variance of group differences. For whatever academic measures significant F-ratios were obtained, the Newman-Keuls procedure was used to determine what groups significantly differ from one another.

Self-Management and Academic Measures

This section presents the correlations between the self-management inventory (LSA) and both the generic academic measures (i.e., ACT and GPA) and the performance measures in the self-directed course (i.e., the total number of points earned and the course grade).

Table 1 shows the mean and standard deviation for the normative sample as compared to the population used in this study. The study population had slightly higher means than the normative sample on all subscales of the LSA as well as the LSA Total.

Table 1

LSA Descriptive Data

	Normative Sample		Self-Directed Course Sample	
LSA DIMENSIONS	Mean	SD	Mean	SD
Performance Focus	11.62	4.02	12.73	3.92
Goal Directedness	12.98	2.94	13.14	2.97
Timeliness of Task	9.50	3.11	9.65	3.25
Physical Space	7.79	3.01	8.56	3.07
LSA Total	41.97	9.43	44.30	9.45

NOTE: Normative sample size was 734, Sample size for self-directed course was 182.

Table 2 shows minimal correlation between the LSA and ACT. The only significant ($p<.05$) correlation was for factor 4, Organization of Physical Space, which was minimally correlated and negative (-.13).

Most of the correlations between the LSA dimensions and GPA were statistically significant (see Table 3). Only Organization of Physical Space failed to yield a significant correlation with GPA. Although significant, these correlations were moderate and accounted for only a small percentage of the variation in GPA. Because GPA may reflect a combination of ability, motivation, and work habits, it is reasonable to expect the LSA to be more strongly related to GPA than to the ACT. Correlations between the LSA and GPA were similar for males and females, with the only differences being for the dimensions of Goal Directedness and Timeliness of Task Accomplishment. Both of these dimensions were significantly correlated with GPA for females but not for males. One explanation of these differences could be the considerable difference in sample size for males and females.

Table 2

Correlations between LSA and ACT

LSA DIMENSION	Correlation with ACT	N	Significance Level
Performance Focus			
Total Sample	.02	294	NS
Females	.05	225	NS
Males	-.02	66	NS
Goal Directedness			
Total Sample	.02	294	NS
Females	.04	225	NS
Males	-.03	66	NS
Timeliness of Task			
Total Sample	-.06	294	NS
Females	.00	225	NS
Males	-.19	66	NS
Physical Space			
Total Sample	-.13	294	.02
Females	-.11	225	NS
Males	-.19	66	NS
LSA Total			
Total Sample	-.06	294	NS
Females	-.01	225	NS
Males	-.13	66	NS

Table 3

Correlations between LSA and GPA

LSA DIMENSIONS	Correlation with GPA	N	Significance Level
Performance Focus			
Total Sample	.19	321	.001
Females	.21	247	.001
Males	.25	72	.03
Goal Directedness			
Total Sample	.17	320	.002
Females	.14	246	.03
Males	.22	72	NS
Timeliness of Task			
Total Sample	.22	321	.000
Females	.18	247	.004
Males	.17	72	NS
Physical Space			
Total Sample	.06	321	NS
Females	.02	247	NS
Males	.10	72	NS
LSA Total			
Total Sample	.21	321	.000
Females	.18	247	.004
Males	.26	72	.03

Inasmuch as the LSA yielded significant correlations with GPA, it was expected that the LSA would also yield significant correlations with performance measures in the self-directed course. However, the only significant correlation ($p<.05$) was between the Performance Focus and Efficiency factor and course grade. All other correlations between the LSA factors and the course performance measures for the total sample were nonsignificant (Table 4). The Performance Focus and Efficiency factor was significantly correlated with total points earned in the course for males ($r=.26$, $N=80$, $p<.05$), but not for females.

The Marlowe-Crowne scores were partialled out (-MC) of the correlations between the LSA and the academic measures to correct for socially desirable response tendencies (Table 5). The Performance Focus dimension of the LSA was not significantly correlated with total points, but was significantly correlated ($p<.05$) after the Marlowe-Crowne scores were partialled out. The Goal Directedness's correlation with GPA changed to nonsignificant and the correlation with ACT changed to significant ($p<.05$) when Marlowe-Crowne scores were partialled out. All other correlations remained unchanged. The results of the partial correlations indicate that socially desirable response tendencies did not inflate the relationship between the LSA and the academic measures.

Table 4

Correlations between LSA and Course Performance

LSA DIMENSIONS	Correlation with Total Points	Correlation with Grade	N
Performance Focus			
Total Sample	.11	.14*	293
Females	.08	.14*	233
Males	.26*	.18	60
Goal Directedness			
Total Sample	-.06	.02	293
Females	-.06	.06	232
Males	-.11	-.12	60
Timeliness of Task			
Total Sample	.07	.07	293
Females	.03	.04	232
Males	.21	.12	60
Physical Space			
Total sample	-.05	.00	294
Females	-.06	-.01	233
Males	.06	.03	60
LSA Total			
Total Sample	.04	.07	293
Females	-.00	.07	233
Males	.18	.06	60

Note: * indicates significance at the .05 level and beyond.

Those students scoring one standard deviation above the mean, 49 or above (LSA-HI) on the LSA were compared to those students scoring one standard deviation below the mean, 31 or below (LSA-LO) on three variables; ACT, GPA and Total Points in the self-directed course (Table 6). Those students scoring one standard deviation below the mean on the LSA (LSA-LO) scored slightly higher on the ACT than those students scoring one standard deviation above the mean (LSA-HI). On the GPA comparison, LSA-HI received significantly higher college grades. On the Total Points in the self-directed course comparison there were almost no differences.

Table 5

Regular and Partial Correlations Between the LSA and Academic Measures

LSA Dimensions	ACT	-MC ACT	GPA	-MC GPA	Total Points	-MC Points	Grade	-MC Grade
Perform.								
Focus	.02	.07	.19*	.20*	.11	.12*	.14*	.13*
Goal Direct.	.02	.12*	.17*	.05	-.06	-.06	.02	-.01
Timeliness of Task	-.06	-.02	.22*	.14*	.07	.02	.07	.02
Physical Space	-.13*	-.12*	.06	.03	-.05	.00	.00	.03
LSA Total	-.06	.00	.21*	.16*	.04	.03	.07	.06

Note. * Indicates correlations significant at the .05 level and beyond. Ns vary from 229 to 321.

Table 6

t-Tests for Independent Sample of High and Low LSA Groups

ACT	N	Mean	SD	SE	t	DF	2-tail Prob
LSA-HI	90	21.83	4.95	.52	-.31	62.60	.75
LSA-LO	29	22.10	3.72	.69			

GPA	N	Mean	SD	SE	t	DF	2-tail Prob
LSA-HI	107	321.15	74.15	7.16	3.65	43.13	.001*
LSA-LO	25	270.28	59.69	11.93			

Total Pts	N	Mean	SD	SE	t	DF	2-tail Prob
LSA-HI	102	163.90	22.11	2.19	.34	31.56	.734
LSA-LO	17	162.53	13.86	3.36			

Note: *Indicates significance at the .05 level & beyond.

Time-Management and Academic Measures

This section presents the correlations between the Time Management Questionnaire (TMQ) and the Lifestyle Approaches Inventory (LSA) as well as the correlations among both the generic academic measures (i.e., ACT and GPA) and the performance measures in the self-directed course (i.e., the total number of points earned and the course grade).

In comparing the scores from the sample population used to make up the TMQ with the scores from the self-directed course there were some very evident differences. The mean on the total score of the sample population was 91 with a standard deviation of 17, while the mean on the total score for the self-directed course was 58.3 with a standard deviation of 7.9.

All correlations between the LSA and TMQ as reported by Verble (1994) were significant (see Table 7). Some of these correlations were moderate, but did indicate some relationship between all factors of the TMQ and all factors of the LSA. The totals of the two inventories were most strongly correlated (.68), followed by the total of the TMQ correlated with the LSA Timeliness of Task Accomplishment factor(.58), and the LSA total with TMQ Time Attitudes factor (.58).

Table 7

Relationship Between LSA and TMQ

LSA Dimensions	TMQ Dimensions			
	Short-Range Planning	Long-Range Planning	Time Attitudes	Total
Performance Focus and Efficiency	.24(.0004)	.28(.0001)	.59(.0001)	.48(.0001)
Goal Directedness	.40(.0001)	.27(.0001)	.37(.0001)	.48(.0001)
Timeliness of Task Accomplishment	.37(.0001)	.49(.0001)	.47(.0001)	.58(.0001)
Organization of Physical Space	.39(.0001)	.41(.0001)	.25(.0003)	.49(.0001)
LSA Total	.46(.0001)	.49(.0001)	.58(.0001)	.68(.0001)

Note: Statistical significance levels are enclosed in parentheses following correlations.

Data shown in this table comes from a dissertation done by John Verble (1994).

Correlations between the TMQ and academic measures were very similar to the correlations between the LSA and academic measures. The only time management factor that was significantly correlated with the ACT was Long-Range Planning. This correlation was negative and was due mainly to the male subjects' responses (see Table 8).

The TMQ, like the LSA was more strongly correlated with GPA than with ACT (see Table 9). The only TMQ factor that was not related to GPA was Long-Range Planning. Like the LSA, most of the TMQ correlations were quite modest (ranging from .12 to .21). The correlations between TMQ and GPA tended to be slightly higher for males in most cases.

The TMQ, like the LSA, yielded few significant correlations with the in-course performance measures. The only two significant correlations with total points earned were Time Attitudes and TMQ Total and these two significant correlations were entirely attributable to the females' correlations. The only significant correlation with course grade was the Time Attitude factor for females (see Table 10).

When the social desirability correlations of the Marlowe-Crowne were partialled out, the correlations approximated those of the regular correlations (see Table 11). Social desirability response tendencies showed little impact on the TMQ's potential for predicting academic measures.

Table 8

Correlations between the TMQ and ACT

TMQ Dimensions	Correlation to ACT	N	Significance Level
Short-Range Planning			
Total Sample	.09	179	NS
Females	.14	133	NS
Males	.03	43	NS
Long-Range Planning			
Total Sample	-.15	179	.05
Females	-.03	133	NS
Males	-.43	43	.005
Time Attitudes			
Total Sample	.09	179	.05
Females	.17	133	NS
Males	.06	43	NS
TMQ-Total			
Total Sample	.03	179	NS
Females	.13	133	NS
Males	-.11	43	NS

Table 9

Correlations between TMQ and GPA

TMQ Dimensions	Correlation to GPA	N	Significance Level
Short-Range Planning			
Total Sample	.18	183	.05
Females	.11	136	NS
Males	.32	43	.05
Long-Range Planning			
Total Sample	.12	183	NS
Females	.13	138	NS
Males	.01	43	NS
Time Attitudes			
Total Sample	.19	183	.01
Females	.24	138	.01
Males	.29	43	NS
TMQ Total			
Total Sample	.21	183	.005
Females	.20	138	.05
Males	.31	43	.05

Those students scoring one standard deviation above the mean, 66 or above (TMQ-HI) on the TMQ were compared to those students scoring one standard deviation below the mean, 49 or below (TMQ-LO) on three variables; ACT, GPA and Total Points in the self-directed course (Table 12). Those students scoring one standard deviation below the mean on the TMQ (TMQ-LO) scored slightly higher on the ACT than those students scoring one standard deviation above the mean (TMQ-HI). On the GPA comparison, TMQ-HI received significantly higher college grades. On the Total Points earned in the self-directed course comparison, TMQ-HI scored slightly higher.

Personality Variables and Academic Measures

The MBTI showed greater promise as a predictor of academic measures than did either the LSA or TMQ. The correlations between the MBTI and prior academic performance (ACT and GPA) showed greater consistency than was the case for the self-management and time-management instruments (see Table 13).

Of the four MBTI indexes, Extraversion-Introversion and Sensing-Intuition were the most consistently related to prior academic performance. Higher ACT scores and higher grades were associated with the introversion preference on the Extraversion-Introversion index, and the intuition

Table 10

Correlations between TMQ and Course Performance

TMQ Dimensions	Correlation to Total Points	Correlation to Grade	N
Short-Range Planning			
Total Sample	.07	.00	151
Females	.12	.04	121
Males	-.17	-.21	29
Long-Range Planning			
Total Sample	.14	.09	151
Females	.15	.10	121
Males	.12	.03	29
Time Attitudes			
Total Sample	.14	.08	151
Females	.21*	.20*	121
Males	.08	.02	29
TMQ Total			
Total Sample	.16	.09	151
Females	.20	.14	121
Males	-.04	-.14	29

Note. * Indicates correlations significant at the .05 level and beyond.

Table 11

Regular and Partial Correlations Between the TMQ and Academic Measures

TMQ Dimensions	ACT	-MC ACT	GPA	-MC GPA	Total Points	-MC Points	Grade	-MC Grade
Short-Range Planning	.09	.12	.18*	.10	.07	.05	.00	.01
Long-Range Planning	-.15*	-.14	.12	.06	.14	.04	.09	.04
Time Attitudes	.09	.11	.19*	.28*	.18*	.14	.15	.08
TMQ Total	.03	.06	.21*	.18*	.16*	.09	.09	.05

Note: * Indicates significance at the .05 level and beyond.

Table 12

t-Tests for Independent Sample of High and Low TMQ Groups

ACT	N	Mean	SD	SE	t	DF	2-tail Prob
TMQ-HI	24	22.54	3.70	.76	-.08	49.90	.939
TMQ-LO	34	22.62	3.73	.64			

GPA	N	Mean	SD	SE	t	DF	2-tail Prob
TMQ-HI	32	309.34	54.27	9.59	3.03	51.51	.004*
TMQ-LO	28	260.75	69.07	12.86			

Total Pts	N	Mean	SD	SE	t	DF	2-tail Prob
TMQ-HI	30	169.90	17.74	3.24	.55	23.93	.586
TMQ-LO	14	166.57	19.02	5.08			

Note: *Indicates significance at the .05 level & beyond.

preference on the Sensing-Intuition index. Of these two scales the Sensing-Intuition index was the strongest predictor of prior academic performance. The Judging-Perceiving index was related to prior GPA, but was not related to ACT scores. Higher GPAs were associated with the judging preference.

Several gender differences emerged in the correlations between the MBTI indexes and prior academic measures. The Extraversion-Introversion and the Thinking-Feeling scales displayed more pronounced gender differences than the other MBTI scales. Females' GPAs were significantly correlated with the E-I scale in the direction of introversion, whereas the males' GPAs were correlated in the direction of extraversion, although that correlation was nonsignificant. Males GPAs were significantly correlated with the T-F scale in the direction of feeling, whereas females' GPAs were not significantly related to this MBTI dimension.

Partialling out the Marlowe-Crowne social desirability response tendency scores from the MBTI prior academic performance correlations resulted in no changes to the pattern of correlations for the total sample (Table 14). Of the three instruments used in predicting prior academic

Table 13

Correlations between the MBTI and Prior Academic Performance

MBTI Dimensions	Correlation to ACT	N	Correlation to GPA	N
Extraversion-Introversion				
Total Sample	.13*	296	.11*	323
Females	.09	227	.19*	249
Males	.18	66	-.07	72
Sensing-Intuition				
Total Sample	.35*	296	.21*	323
Females	.36*	227	.23*	249
Males	.43*	66	.26*	72
Thinking-Feeling				
Total Sample	-.05	296	.07	323
Females	-.06	227	-.05	249
Males	.05	66	.35*	72
Judging-Perceiving				
Total Sample	.07	296	-.16*	323
Females	.05	227	-.12	249
Males	.13	66	-.25*	72

Note: * Indicates significance at the .05 level and beyond.

Table 14

Regular and Partial Correlations between the MBTI and Prior Academic Performance

MBTI Dimensions	Correlation to ACT	N	Correlation to GPA	N
Extraversion-Introversion				
Regular	.13*	296	.11*	323
Partial	.12*	231	.17*	231
Sensing-Intuition				
Regular	.35*	296	.21*	323
Partial	.38*	231	.28	231
Thinking-Feeling				
Regular	-.05	296	.07	323
Partial	-.04	231	.06	231
Judging-perceiving				
Regular	.07	296	-.16*	323
Partial	.07	231	-.15*	231

Note: * Indicates significance at the .05 level and beyond.

performance the MBTI appeared to be less affected by social desirability response tendencies.

The Sensing-Intuition index was the strongest indicator of academic performance in the Self-directed course with greater total points and higher grades associated with the intuition preference. The Extraversion-Introversion index was also significantly correlated with the in-course performance measures, with the introversion preference being associated with higher grades and higher total points. Neither the Thinking-Feeling index or the Judging-Perceiving index showed any significant correlations for the total sample (see Table 15).

Gender differences in the correlations between the MBTI indexes and academic performance in the self-directed course were most notable on the Extraversion-Introversion index. The introversion preference was associated with more total points and a higher course grade for females, but males tended to achieve higher grades and more total course points with an extraversion preference, though this pattern was not significant. The Sensing-Intuition index was significant for both sexes, with the intuition preference associated with higher course points and a higher course grade, but males' correlations were much stronger than females. Correlations between scores on the Thinking-Feeling index and the in-course performance measures were in the direction of the thinking preference for females, although not

Table 15

Correlations between the MBTI and Academic Performance in the Self-Directed Course

MBTI Dimensions	Correlation to Total Pts	N	Correlation to Grade	N
Extraversion-Introversion				
Total Sample	.16*	295	.14*	294
Females	.24*	234	.21*	233
Males	-.14	60	-.11	60
Sensing-Intuition				
Total Sample	.23*	295	.23*	294
Females	.22*	234	.20*	233
Males	.30*	60	.33*	60
Thinking-Feeling				
Total Sample	-.01	295	.01	294
Females	-.11	234	-.11	233
Males	.24	60	.29*	60
Judging-Perceiving				
Total Sample	-.05	295	-.07	294
Females	-.07	234	-.12	233
Male	.04	60	.06	60

Note: * Indicates significance at the .05 level and beyond.

significantly. Males, however, did have a significant correlation with higher course grades associated with the feeling preference.

Partialing out the Marlowe-Crowne social desirability response tendency scores from the MBTI academic performance in the self-directed course correlations resulted in no changes to the pattern of correlations for the total sample (see Table 16).

Those MBTI personality types into which at least ten subjects were classified were compared on all four academic measures. Of the 16 possible MBTI classifications, only 9 had at least 10 subjects. Table 17 shows the means for the four academic measures for these 9 MBTI groups.

Of the four academic measures subjected to an analysis of variance only the ACT scores and grade in the self-directed course yielded a significant F. Even though the cumulative group differences were significant, a followup Newman-Keuls analysis of the course grade showed that no two groups were significantly different.

The ACT analysis of variance is shown at Table 18. The followup Newman-Keuls on the ACT means yielded the following results: (a) The ENFJ group obtained a significantly higher ACT mean than did the ESTJ, ESFP, and ESFJ groups. (b) The ENFP group was also significantly higher than the ESTJ group. Of the five groups which had significant differences in ACT means, the only MBTI index that consistently made a

Table 16

Regular and Partial Correlations between the MBTI and Self-Directed Course Scores

MBTI Dimensions	Correlation to Total Pts	N	Correlation to Grade	N
Extraversion-Introversion				
Regular	.16*	295	.14*	294
Partial	.19*	231	.17*	231
Sensing-Intuition				
Regular	.23*	295	.23*	294
Partial	.28*	231	.23	231
Thinking-Feeling				
Regular	-.01	295	.01	295
Partial	.03	231	.03	231
Judging-Perceiving				
Regular	-.05	295	-.07	295
Partial	-.08	231	-.11	231

Note: * Indicates significance at the .05 level and beyond.

difference was S-N, with the N groups having higher means and the S groups having lower means.

Comparing those MBTI groups having an N to those groups having an S, yielded the following results. The composite intuition (N) group scored significantly higher ($p<.05$) than the composite sensing group on the ACT (N mean=22.93, S mean=20.81), total points earned in the course (N mean-165.27, S mean=159.78) and grade in the course (N mean=2.94, S mean=2.64).

Best Predictors of Academic Performance Measures

In order to determine the best predictors of academic performance those factors from the MBTI, LSA, and TMQ that correlated significantly with any of the academic measures (i.e., ACT, GPA, Course Points, or Course Grade) were entered into a stepwise multiple regression analysis. Using a stepwise multiple regression analysis for each academic dimension allowed potential predictors from each of the three instruments to be combined into the strongest composite prediction equation for each academic measure.

Table 17

Mean Scores for Academic Measures by MBTI Type

MBTI Type	ACT Score	College GPA	Course Points	Course Grade
ISTJ	22.61	3.10	162.44	3.00
	(N=23)	(N=28)	(N=27)	(N=27)
ISFJ	21.50	2.99	159.54	2.41
	(N=26)	(N=32)	(N-28)	(N=28)
INFP	22.71	3.29	173.05	3.18
	(N=17)	(N=18)	(N=19)	(N=19)
ESFP	19.73	2.67	154.65	2.40
	(N=22)	(N=19)	(N=20)	(N=20)
ENFP	22.57	3.00	159.38	2.77
	(N=30)	(N=34)	(N=34)	(N=34)
ESFJ	20.78	2.96	160.10	2.70
	(N=55)	(N=62)	(N=59)	(N=59)
ENFJ	24.15	3.19	169.61	3.11
	(N=20)	(N=24)	(N=23)	(N=23)
INFJ	22.42	2.90	161.33	2.67
	(N=19)	(N=17)	(N=12)	(N=12)
ESTJ	18.89	3.10	160.79	2.67
	(N=18)	(N=22)	(N=19)	(N=19)

Note: Only those MBTI groups having at least ten subjects were included.

Table 18

Oneway Analysis of Variance ACT means by Myers-Briggs Type

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	8	461.6208	57.7026	3.2028	.0018
Within Groups	221	3981.5792	18.0162		
Total	229	4443.2000			

Predictors of ACT

Two of the MBTI dimensions (Sensing-Intuition and Extraversion-Introversion); one subscale of the LSA (Organization of Physical Space); and one subscale from the TMQ (Long-Range Planning) all showed significant correlations with ACT. Combining these four variables in a stepwise multiple regression analysis showed the Sensing-Intuition scale of the MBTI to be the strongest predictor of ACT, accounting for 13% of the variability. The Extraversion-Introversion scale of the MBTI added another 2% to the equation. The Organization of Physical Space subscale of the LSA and the Long-Range Planning subscale of the TMQ, which were significantly correlated with ACT, failed to add significantly to the predictive potential when included in the stepwise multiple regression analysis.

Predictors of GPA

Three of the MBTI dimensions (Extraversion-Introversion, Sensing-Intuition and Judging-Perceiving), four scores from the LSA (Performance Focus, Goal Directedness, Timeliness of Task Accomplishment and Total Score); and three scores from the Time-Management Questionnaire (Short-Range Planning, Time Attitudes, and Total Score) were significantly correlated with GPA. Combining all ten of these variables in a stepwise multiple regression analysis showed the Timeliness of Task Accomplishment from the LSA accounting for about 5% of the variability, the Sensing-Intuition index from the MBTI accounting for 4% of the variability and the Judging-Perceiving index from the MBTI accounting for an additional 6% of the variability. The Judging-Perceiving index accounted for the most variability in the equation even though it was entered in the equation as step 3 because it had the lowest correlation to GPA of the three (-.164 compared to .223 for Timeliness of Task Accomplishment from the LSA, and .195 for the Sensing-Intuition index of the MBTI). The other seven variables were not significant predictors.

Predictors of Course Points

Two dimensions from the MBTI (Extraversion-Introversion and Sensing Intuition) and two scores from the TMQ (Time

Attitudes and Time-Management Total) were significantly correlated with Total Course Points. Sensing-Intuition accounted for 5% of the variability in Total Points earned in the course, Time Management Total 3% and Extraversion-Introversion an additional 3%. Time Attitudes was not a significant predictor.

Predictors of Course Grade

Three dimensions of the MBTI (Extraversion-Introversion, Sensing-Intuition, and Judging-Perceiving) and one score from the LSA (Performance Focus) were significantly correlated with Course Grade. Sensing-Intuition accounted for 5% of the variability in course grade, Extraversion-Introversion accounted for an additional 3% and Performance Focus another 2% of the variability. Judging-Perceiving was not a significant predictor.

CHAPTER V

DISCUSSION

Introduction

As hypothesized, combining self-management, time-management, and personality dimensions did yield a stronger prediction of academic performance than each measure taken separately. Taken separately the MBTI Sensing-Intuition index accounted for 13% of the ACT variability and the Extraversion-Introversion scale added another 2% for a combined total of 15%. Five percent of the variability in GPA was accounted for by the Timeliness of Task Accomplishment from the LSA, 4% from the Sensing-Intuition index of the MBTI, and 6% from the Judging-Perceiving index of the MBTI for a total of 15%. Five percent of the variability in total course points was accounted for by the Sensing-Intuition index of the MBTI, 3% by the Time Management Total, and 3% by the Extraversion-Introversion index of the MBTI accounting for a combined total of 11%. The personality dimensions of the MBTI were more consistently and more strongly related to the academic performance measures than was either the self-management (LSA) or the time-management (TMQ) instruments.

The LSA and TMQ were both somewhat predictive of grade-point average, but neither was very predictive of ACT scores or of performance measures in the self-directed course. This lack of prediction in a course designed to be self-directing is difficult to explain without a thorough examination of the course.

The self-directed course required students to select options for mastering course material and to identify times for pursuing such options (e.g., answering study questions, viewing videotapes). However, the majority of the testable aspects in the course were highly structured by the instructor. Instructor-prepared study questions over the reading materials and videotapes included in the course could be purchased. Videotapes could be viewed on an individual basis whenever students desired, but all tapes were also scheduled during class time with a follow-up discussion of the related study questions. The convenience and the availability of the instructor led most students to view the tapes during class time.

The structure of the course as well as college students' tendencies to attend all classes, even when told that test days were the only mandatory attendance times (some students tried to explain to the researcher why they had missed a class late in the term), as well as the tendency of the majority of students to buy all required and recommended class materials resulted in the majority of

students being exposed to all critical content of the course either in class or from the study questions. The only decision required of the student was when to study.

A less structured course may have left more decision-making up to the student, thus requiring the use of self-management and time-management skills which were not strongly required in the Educational Psychology course. This speculation is supported by the fact that self-management and time-management measures were generally related to college GPA, which would presumably reflect performance under a variety of course formats.

Personality Type and Academic Performance

Although the MBTI proved to be a better overall predictor of academic performance than the LSA or TMQ, two dimensions of the MBTI stood out as most predictive of academic measures. Those two dimensions were Extraversion vs. Introversion and Sensing vs. Intuition. Those students who obtained scores in the direction of Introversion and Intuition did better on academic measures than those who obtained scores in the direction of Extraversion and Sensing.

Of all the MBTI dimensions, the most powerful predictor of academic success was the Sensing-Intuition index. The intuitive student prefers experiences involving imagination

and understanding of new ideas. These preferences may assist the intuitive academically, as school tends to be a succession of new ideas. Imagination helps students apply these ideas to future situations. Academic success of intuitives appears to be true for both male and female students. The linkage between intuition and academic performance was further confirmed in the typology analysis, with the combined intuition groups doing significantly better than the combined sensing groups on three of the four academic measures. The Sensing-Intuition index was significantly correlated with all four of the academic measures and was the strongest predictor for three of the four academic measures.

The Extraversion-Introversion index of the MBTI also yielded significant correlations with the academic measures, but the correlations were not nearly as strong as those for the Sensing-Intuition index. The Extraversion-Introversion index was significantly correlated ($p. < .05$) with ACT, college GPA, Total Points in the self directed-course and Final Grade in the self-directed course. However, the Extraversion-Introversion index added only 2% to the prediction of ACT, and 3% to the prediction of Total Course Points, and 3% to the prediction of Course Grade in the regression analysis.

The final MBTI index expected to influence academic performance was Judging-Perceiving. The Judging-Perceiving

index was significantly correlated with college GPA only and accounted for 6% of the variability in college GPA.

In evaluating why the Judging-Perceiving index was not more predictive of the performance measures, the author examined past research. Schurr and Ruble (1986) explain that the Judging-Perceiving index is "more related to actual academic performance...than to scores obtained on tests" (p.28). Anchors, Robbins, and Gershman (1989) found that Perceiving students received higher ACT scores, while the Judging students received higher GPAs.

This study yielded findings consistent with those of previous studies concerning college GPA, but the relationship between the Judging-Perceiving index and performance in the self-directed course would be counter to the findings in previous studies. The previously discussed structure of the course appears to be a contributing factor in the Judging-Perceiving scale showing no significant contribution to the prediction of academic variability in the self-directed course.

The second factor contributing to nonsignificance in the Judging-Perceiving scale appears to be the homogeneity of the study group. Judging types have received higher GPAs than Perceiving types in previous studies (Anchors, Robbins, & Gershman, 1989; Schurr & Ruble, 1986), but in this study five of the eight personality types that included Perceiving were eliminated from the group analysis. Table 15 showed

six personality types that included a Judging preference, but only three with a Perceiving preference. This made it difficult to adequately compare these preferences when the Judging side of the Judging-Perceiving index was more fully represented than the perceiving side.

Gender Differences

Although there were many gender similarities in the relationships between the predictive instruments and the academic measures, there were some significant gender differences. The Lifestyle Approaches Inventory (LSA) was generally unrelated to performance measures in the self-directed course; however, the Performance Focus subscale (keeping one's focus on important activities until they are completed) was predictive of course points for males (r=.26) but not for females (r=.08). This may suggest that because of competing priorities, the ability to focus on academic priorities may be more fundamental to the academic success of males than females.

Between time-management scores and academic measures there were also some significant differences. Males' Short-Range Planning scores were significantly related to their GPAs (r=.32, p<.05), but females' scores were not (r=.11). This difference may indicate that males need to plan their short term activities in order to get assignments completed

and to prepare for exams, or it may indicate that females are more prone to do what is required academically without the need to plan these activities.

Long-Range Planning scores were negatively and significantly related to ACT scores for males (r=-.43, p<.005), but not for females (r=-.03). Long-Range Planning may suggest a cognitive structure that interferes with males' ability to constantly switch mental processes during tests (ACT in this case) that change topics or required mental processes from question to question, and from subtest to subtest. Females' skills in taking tests such as the ACT appear not to be related to this subtest of the TMQ, which may indicate an ability to switch mental processes more readily.

Females' Time Attitudes scores as well at Total Time-Management scores were significantly related to their total points in the self-directed course (Time Attitudes, r=.21, Total Time-Management, r=.20, p<.05). Males' Time Attitudes scores as well as Total Time-Management scores were not related to their total points in the self-directed course (r=.08 for Time Attitudes, r=.03 for Total Time-Management score).

One possible conclusion from the gender differences found on the Time-Management Questionnaire is that Time-Management factors predict generic performance measures better for males than for females, but predict performance

in a highly structured self-directed course better for females than for males. Females' time-management skills apparently made a greater difference in their ability to make good use of the options available to them in a self-directed course structure.

Some of the greatest gender differences were found in the correlations between the MBTI and the academic measures. The scores on the first index of the MBTI, Extraversion-Introversion were related to 3 of the 4 academic measures for females (r=.19 for GPA, p<.005; r-.24 for course total, p<.001; and r=.21 for course grade, p,.001), while none of the corresponding correlations for males were significant, and all were negative. Introversion appears to be associated with higher academic measures for females but not for males. This may indicate that males and females handle the conflicting pressures of a social life and academics differently, even though sharing the same Extraversion or Introversion personality type.

The Thinking-Feeling index of the MBTI was not anticipated to be a good predictor of academic performance, and yet this index was related to two of the four academic performance measures for males (r=.35 for GPA, p<.01; r=.29 for course grade, p<.05), but was unrelated to all four academic performance measures for females. Females are often described as being more aware of feelings, and yet it is the male that is most favorably affected academically by

having a feeling preference. The male student is often stereotyped as a rational thinker, but being sensitive to the expectations and reactions of teachers appears to be an academic asset for males.

The last MBTI index that was expected to be related to academic prediction was Judging-Perceiving. However, this index was significantly related only to GPA (r=-.16, p<.005) and was attributable more to the responses of males than females (r=-.12, NS for females; r=-.25, p<.05 for males). This indicates that males that are planful and organized are more likely to have higher GPA's. The lack of representation of the perception preference (discussed in the next section) may have contributed to this gender difference. Any conclusions made about gender differences are purely speculative and will need further research. Most of the differences found in this study though statistically significant were very small in actual terms.

Limitations of the Study

The Effect of Homogeneity on Study Results

Because all subjects in this study were college students, less academically inclined young adults were under-represented in the sample. This made the group more homogeneous in two ways, the first being the narrowing of the distribution through college acceptance, and the second

being the narrowing of the distribution through self-selection into applying for college, which may have eliminated some personality types who found academic pursuits uncomfortable.

The third narrowing of the distribution resulted from the course being offered at the sophomore level. The majority of participants were sophomore and junior level with only a few freshmen. Because the freshman year has the largest attrition rate, the level of the course precluded the inclusion of many students who would presumably have widened the range of scores.

The next narrowing of the field came from the selection of the field of education. The course from which all subjects were drawn is required for teaching certification, focusing on developmental issues important to education. Students needing a general course in human development were referred to other classes. This specification then eliminated most business majors, most engineering majors, most architecture majors, most nursing majors, and a good percentage of math majors. The homogeneity resulting from the use of this course was the self-selecting out of the sample a major portion of the college population.

When the sample populations used in constructing the LSA (mean 41.97, SD 9.43), was compared to the population used in this study (mean 44.30, SD 9.45), the differences were insignificant. However, the TMQ was very different.

The population used in constructing the instrument had a mean of 91 with a standard deviation of 17, while this study attained a mean of 58.3 and a standard deviation of 7.9. These differences in means and standard deviations may be the result of a younger sample being used in the normative study, which was done with a freshman psychology class. Social desirability response tendencies may have been more of an influence with freshman students, but the normative sample was not tested for social desirability response tendencies to confirm or refute this possibility. Further testing or duplication will be needed to find out why this disparity occurred between the TMQ means and standard deviations in the current study and the normative study.

Taking those students one standard deviation above the mean on the LSA and comparing them to those scoring one standard deviation below the mean forced some heterogeneity and resulted in a significant (.001) t-test of independent sample for GPA (Table 6). Using the same analysis for the TMQ also resulted in a significant (.004) result for GPA (Table 12).

The Effect of Similar Instruments

Table 7 shows the relationships of the scores on the subscales and total scores of the LSA and TMQ (Verble, 1994). Each of the subscales is significantly correlated with each of the subscales of the other instrument.

Statistically this indicates that much of the same concept is being measured by both instruments.

The two instruments are duplicated in the appendix. In looking at the specific questions on each instrument the LSA appears to be more general indicating total life management. All of the questions on the LSA are generically stated, but over half of the questions could be applied to academic work (e.g., "I have difficulty judging how long it will take me to complete a task"). The TMQ on the other hand is more directly study related in its questions ("Do you have a set of goals for the entire semester?). Content validity would tend to indicate two very different measuring devices, but the statistical analysis indicates that a generic organizational inventory (LSA) has a lot in common with a more specific measure of time management (TMQ). These two instruments will need further study to determine if they are in fact measuring different things.

The Effect of Social Desirabilty Response Tendencies

Any time a self-report instrument is used in a study there is the potential for respondents to attempt to look their best. Because all three instruments in this study were self-report instruments, the Marlowe-Crowne Social Desirability Scale (MC) scores were partialled out of the correlations between the self-report predictors and the academic measures. If social desirability tendencies had

had a strong influence on the correlations between self-report predictors and academic measures, then the correlations with the Marlowe-Crowne scores subtracted would be expected to be much lower than the original correlations. When these two sets of correlations were compared, there was very little actual difference and no significant differences. Therefore, socially desirable response tendencies which were expected to be a limitation, or at least an influence were not a limiting factor.

Additional Limitations

Due to the number of correlations computed in this study, there is the possibility that some significant correlations could have occurred by chance. Secondly, many of the correlations were statistically significant due to the large number of subjects, but the relationships were not substantial in absolute terms. In the group comparisons of LSA with GPA, a difference of .5 is statistically significant, and yet it is not even a full grade difference in actual terms.

Implications for Educators

College admissions officers need to take a close look at their reliance on the ACT as a major criterion for admission to college. Fifteen percent of the variability on

the ACT was accounted for by personality type, and yet that was not the same profile that accounted for 15% of the variability in college GPA. A more open admission policy with closer monitoring of at risk students, as well as more diagnostic testing to assist students in an academic fit could possibly produce more graduates.

Classroom teachers can use a knowledge of personality type to add diversity to their teaching style to reach all students. Group work for the extraverts, reading assignments for the introverts, hands on work for the sensors, brainstorming sessions for the intuitives, logic games for the thinkers, stories like The Diary of Anne Frank for the feelers, and ethical situations for the judgers and perceivers to discuss and compare reasoning strategies.

School counselors can use an awareness of personality type to not only help students decide on majors where they will do best, but also where they will be the most comfortable. In this study the S-N scale was the strongest academic predictor with the intuitives doing better in a curriculum filled with new ideas. The sensors are more comfortable with hands on learning and may do better in practical courses such as Horticulture and Landscape Design, or Industrial Art.

Introductory and study skills teachers can use the self-management and time-management techniques to help get students off to the strongest start possible. These

instruments did not strongly predict grades until a forced heterogeneity of one standard deviation above and below the mean showed a significant relationship to GPA for both instruments. The freshman class is a more diverse group than was used in this study and may have the same results as the forced heterogeneity.

Opportunities for Further Research

A longitudinal study needs to be done at the high school level to include a more heterogeneous group to ascertain if personality type, self-management or time-management are predictive of who goes on to college. A longitudinal study could also have been done with these same two hundred and ninety-six students who have already been tested to see if the results of this study carry through to graduation.

The gender differences found on the LSA, TMQ and MBTI need to be further studied to see if these are gender differences peculiar to education majors, or if they are consistent across all college majors. Previous studies with the MBTI have reported few of the gender differences found in this study, suggesting the need for further gender work. Nursing, architecture, engineering and business majors were excluded from this study and may show different gender results.

Comparing those scoring one standard deviation above and below the mean on the LSA and TMQ produced significant relationships to college GPA. A study using these same instruments with the freshman class may produce the same results due to the diversity of the study population.

A university wide study could also be done to see if the predictions made about the sensing types doing better in hands-on courses is in fact true at UT, and if these types of courses do in fact enroll more sensors than intuitors.

BIBLIOGRAPHY

BIBLIOGRAPHY

Allport, G. W. (1937). Personality: A Psychological Interpretation. New York: Holt.

Allport, G.W. (1961). Pattern and Growth in Personality. New York: Holt, Rinehart & Winston.

Anchors, W.S., Robbins, M.A., & Gershman, E.S. (1989). The relationship between Jungian Type and persistence to graduation among college students. Journal of Psychological Type, 17, 20-25.

Astin, A. (1975). Preventing students from dropping out. San Francisco: Jossey-Bass.

Bandura, A. (1969). Principles of Behavior Modification. New York: Holt, Rinehart & Winston.

Blum, G.S. (1953). Psychoanalytic Theories of Personality. New York: McGraw-Hill.

Bradway, K., & Detloff, W. (1976). Incidence of psychological types among Jungian analysts classified by self and by test. Journal of Analytical Psychology, 21, 134-146.

Brandon, J.E., Oescher, J., & Loftin, J.M. (1990). The Self-Control Questionnaire: An assessment. Health Values-Health Behavior, Education and Promotion, 14, 3-9.

Britton, B.K., & Glynn, S.M. (1989). Mental management and creativity: A cognitive model of time management for intellectual productivity. In J.A. Glover, R.R. Ronning, & C.R. Reynolds (Eds.), Handbook of Creativity (pp. 429-440). New York: Plenum Press.

Britton, B.K., & Tesser, A. (1991). Effects of time-management practices on college grades. Journal of Educational Psychology, 83, 405-410.

Caffarella, R.S., & Caffarella, E.P. (1986). Self-directedness and learning contracts in adult education. Adult Education Quarterly, 36, 226-234.

Campbell, D.E., & Davis, C.L. (1988). Improving learning by combining critical thinking skills with psychological type. Syracuse, NY: ERIC. (ERIC Document Reproduction Service No. ED 306 250)

Carlyn, M. (1977). An assessment of the Myers-Briggs Type Indicator. Journal of Personality Assessment, 38, 801-810.

Cattell, R.B. (1950). Personality: A Systematic Theoretical and Factual Study. New York: McGraw-Hill.

Chapman, J., Cullen, J., Boersma, F., & Maguire, T. (1981). Affective variables and school achievement: A study of possible causal influences. Canadian Journal of Behavioral Science, 13, 181-192.

Cohen, D., Cohen, M., & Cross, H. (1981). A construct validity study of the Myers-Briggs Type Indicator. Educational and Psychological Measurement, 41, 883-891.

Craighead, W.E., Kazdin, A.E., & Mahoney, M.J. (1976). Behavior Modification. Boston: Houghton Mifflin.

Crouse, J., & Trusheim, D. (1988). The Case against the SAT. Chicago: University of Chicago Press.

Crown, D.P.,& Marlowe, D.(1960). A new scale of social desirability independent of psychopathology. Journal of Consulting Psychology, 24, 349-354.

Dean, M.R., Malott, R.W., & Fulton, B.J. (1983). The effects of self-management training on academic performance. Teaching of Psychology, 10, 77-81.

Dunn, B.R. (1985). The relationship between personality type and memory processes. Journal of Psychological Type, 9, 30-33.

Eysenck, H.J. (1970). The Structure of Human Personality (3rd ed.). London: Methuen.

Eysenck, H.J., & Eysenck, M.W. (1985). Personality and Individual Differences. New York: Plenum Press.

Fenichel, O. (1945). The Psychoanalytic Theory of Neuroses. New York: Norton.

Fischer, R.E., & Juni, S. (1982). The anal personality: Self-disclosure, negativism, self-esteem, and superego severity. Journal of Personality Assessment, 46, 50-58.

Fox, L. (1962). Effecting the use of efficient study habits. Journal of Mathetics, 1, 75-86.

Freud, S. (1952). Civilization and its discontents. In R.R. Hutchins (Ed.), Great Books of the Western World (pp. 767-802). Chicago: Encyclopaedia Britannica.

Freud, S. (1957). A General Introduction to Psychoanalysis (J. Riviere, Trans.). New York: Permabooks.

Freud, S. (1969). An Outline of Psychoanalysis (J.Strachey, Trans. & Ed.). New York: Norton.

Fry, R. (1991). Manage Your Time. Hawthorne, NJ: The Career Press.

Gall, M.D. (1988). Making the grade. Rocklin, CA: Prima.

Gose, A., Wooden, S., & Muller, D. (1980). The relative potential of self-concept and intelligence as predictors of achievement. Journal of Psychology, 104, 279-287.

Hall, B.L., & Hursch, D.E. (1982). An evaluation of the effects of a time management training program on work efficiency. Journal of Organizational Behavior Management, 3, 73-96.

Hall, C.S. & Lindzey, G. (1957). Theories of Personality. New York: Wiley.

Hanel, F.J. (1981). Field testing the effectiveness of a self-instruction time management manual with managerial staff in an institutional setting (Doctoral Dissertation, University of Manitoba, Canada, 1981). Dissertation Abstracts International, 42, 3400B.

Harrison, N.W. (1976). Validation of Jung's typological framework. Dissertation Abstracts International, 37, 1467.

Horney, K. (1950). Neurosis and Human Growth. New York: Norton.

Houle, C.O. (1980). Continuing Learning in the Professions. San Francisco: Jossey-Bass.

Isachsen, O., & Berens, L.V. (1988). Working Together. Coronado, CA: Neworld Management Press.

Jacobi, J. (1962). The Psychology of Jung. New Haven, CT: Yale University Press.

Johnson, D.A. (1992). Test-retest reliabilities of the Myers-Briggs Type Indicator and the Type Differentiation Indicator over a 30-month period. Journal of Psychological Type, 24, 54-58.

Johnson, J.A., Sample, J.A., & Jones, W.J. (1988). Self-directed learning and personality type in adult degree students. Psychology, A Journal of Human Behavior, 25, 32-36.

Jones, E. (1963). The Life and Work of Sigmund Freud (L. Trilling & S. Marcus, Eds.). Garden City, NY: Anchor Books.

Jung, C.G. (1921). Psychologische Typen [Psychological Types]. Zurich: Rascher & Cie.

Jung, C.G. (1964). Two Essays on Analytical Psychology. New York: Meridian.

Jung, C.G. (1969). The Structure and Dynamics of the Psyche (2nd ed.). Princeton, NJ: Princeton University Press.

Jung, C.G. (1971). Psychological Types [H.G. Baynes Trans., F.C. Hull Rev.]. Princeton: Princeton University Press. (original work published 1921)

Juni, S., Masling, J., & Brannon, R. (1979). Interpersonal touching and orality. Journal of Personality Assessment, 43, 235-237.

Kagan, J., & Mussen, P. (1956). Dependency themes on the TAT and group conformity. Journal of Consulting Psychology, 20, 29-32.

Kalsbeek, D. (1987). Campus retention: The MBTI in institutional self-studies. In J.A. Provost & S. Anchors (Eds.), Applications of the Myers-Briggs Type Indicator in Higher Education. Palo Alto, CA: Consulting Psychologists.

Kanoy, K.W., Wester, J., & Latta, M. (1989). Predicting college success of freshmen using traditional, cognitive, and psychological measures. Journal of Research and Development in Education, 22, 65-70.

Karoly, P. & Kanfer, F.H. (Eds.). (1982). Self-Management and Behavior Change: From Theory to Practice. New York: Pergamon Press, Inc.

Kelly, G.A. (1955). The Psychology of Personal Constructs (Vols. 1-2). New York: Norton.

Kline, P. (1972). Fact and Fantasy in Freudian Theory. London: Methuen.

Knox, A.B. (1973). Lifelong Self-directed Education. Syracuse, NY: ERIC Clearinghouse on Adult Education. (ERIC Document Reproduction Service No. ED074 346)

Kowalski, C. (1977). The Impact of College on Persisting and Nonpersisting Students. New York: Philosophical Library.

Long, J.D., Gaynor, P., Erwin, A., & Williams, R.L. (1994). The relationship of self-management to academic motivation, study efficiency, academic satisfaction, and grade point average among prospective education majors. Psychology,31, 22-30.

Lakein, A. (1973). How to Get Control of Your Time and Your Life. New York: Wyden.

Longmon, D.G., & Atkinson, R.H. (1988). College Learning and Study Skills. St. Paul, MN: West.

Macon, T.H., Shahani, C., Dipboye, R.L., & Phillips, A.P. (1990). College students' time management: Correlations with academic performance and stress. Journal of Educational Psychology, 82, 760-768.

Mahoney, M.J., & Thoresen, C.E. (1974). Self-Control: Power to the Person. Monterey, CA: Brooks/Cole.

Masling, J., Weiss, L., & Rothschild, B. (1968). Relationships of oral imagery to yielding behavior and birth order. Journal of Consulting and Clinical Psychology, 32, 89-91.

Maslow, A.H. (1962). Toward a Psychology of Being. New York: Van Nostrand.

Maslow, A.H. (1970). Motivation and Personality (2nd ed.). New York: Harper & Row.

May, R. (1953). Man's Search for Himself. New York: Norton.

May, R. (1958a). Contributions of existential psychotherapy. In R. May, E. Angel, & H.F. Ellenberger (Eds.), Existence: A New Dimension in Psychiatry and Psychology (pp. 3-36). New York: Basic Books.

May, R. (1958b). The origins and significance of the existential movement in psychology. In R. May, E. Angel, & H.F. Ellenberger (Eds.), Existence: A New Dimension in Psychiatry and Psychology (pp. 3-36). New York: Basic Books.

Myers, I.B., & McCaulley, M.H. (1985). Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator. Palo Alto, CA: Consulting Psychologists Press.

Myers, I.B., & Myers, P.B. (1990). Gifts Differing. Palo Alto, CA: Consulting Psychologists Press.

Nelson, R., Scott, T., & Bryan, W. (1984). Precollege characteristics and early college experiences as predictors of freshman year persistence. Journal of College Student Personnel, 25, 50-54.

Oddi, L.F. (1987). Perspectives on self-directed learning. Adult Education Quarterly, 38, 21-31.

O'Grady, K.E. (1988). The Marlowe-Crowne and Edwards Social Desirability Scales: A Psychometric Perspective. Multivariate Behavioral Research, 23, 87-101.

Owen, D. (1985). None of the Above. Boston: Houghton Mifflin.

Provost, J.A. (1985). "Type watching" and college attrition. Journal of Psychological Type, 9, 16-23.

Rogers, C.R. (1961). On Becoming a Person. Boston: Houghton Mifflin.

Rogers, C.R., & Sanford, R,.C. (1984). Client-centered psychotherapy. In H.I. Kaplan & B.J. Sadock (Eds.), Comprehensive Textbook of Psychiatry (Vol. 4, pp. 1374-1388). Baltimore: Williams & Wilkins.

Rosenbaum, M. (1980). A schedule for assessing self-control behaviors: Preliminary findings. Behavior Therapy, 11, 109-121.

Rotter, J.B. & Hochreich, D.J. (1975). Personality. Glenview, IL: Scott, Foresman.

Ryckman, R.M. (1993). Theories of Personality. Pacific Grove, CA: Brooks/Cole.

Schurr, K.T., & Ruble, V.E. (1986). The Myers-Briggs Type Indicator and first-year college achievement: A look beyond aptitude test results. Journal of Psychological Type, 12, 25-37.

Schurr, K.T., Ruble, V.E., & Henriksen, L.W. (1988). Relationships of Myers-Briggs Type Indicator personality characteristics and self-reported academic problems and skill ratings with Scholastic Aptitude Test scores. Educational and Psychological Measurement, 48, 187-196.

Schurr, K.T., Ruble, V.E., & Henriksen, L.W. (1989). Effects of different university admission practices on the MBTI and gender composition of a student body, graduation rate, and enrollment in different departments. Journal of Psychological Type, 18, 24-32.

Skager, R. (1978). Lifelong education and evaluation practice. Hamburg, Germany: UNESCO Institute for Education and Oxford, England: Pergammon Press.

Skinner, B.F. (1953). Science and Human Behavior. New York: Macmillan.

Smith, R.M. (1976). Learning how to learn in adult education. Dekalb, IL: ERIC Clearinghouse in Career Education Information, 1976. (ERIC Document Reproduction Service No. ED 132 245)

Smith, R.M. (1982). Learning How to Learn. Chicago: Follett Publishing Company.

Stricker, L.J. & Ross, J. (1962). A description and evaluation of the Myers-Briggs Type Indicator. (Educational Testing Service Research Bulletin 62-6). Princeton, NJ: Educational Testing Service.

Stuart, R.B. (Ed.). (1981). Behavioral Self-Management. New York: Brunner/Mazel.

The American College Testing Program (1971). Your college freshmen. Iowa City: ACT Publications.

Thomas, J.W. (1988). Proficiency at Academic Studying. Contemporary Educational Psychology, 13, 265-275.

Thoresen, C.E., & Mahoney, M. (1974). Behavioral Self-Control. New York: Holt, Rinehart & Winston.

Tinto, V. (1987). Leaving College: Rethinking the Causes and Cures of Student Attrition. Chicago: University of Chicago Press.

Tribich, D., & Messer, S. (1974). Psychoanalytic character type and status of authority as determiners of suggestibility. Journal of Consulting and Clinical Psychology, 42, 842-848.

Tzeng, O.C.S., Outcault, D., Boyer, S.L., Ware, R., & Landis, D. (1984). Item validity of the Myers-Briggs Type Indicator. Journal of Personality Assessment, 48, 255-256.

Verble, J.S. (1994). Self-Management, Time-Management and Personality Type. Unpublished doctoral dissertation, University of Tennessee, Knoxville.

Walter, T., & Siebert, A. (1981). Student Success. New York: Holt, Rinehart and Winston.

Watson, D., & Tharp, R.G. (1972). Self-Directed Behavior: Self-Modification for Personal Adjustment. Pacific Grove, CA: Brooks/Cole.

Williams, R.L., & Long, J.D. (1991). Manage Your Life (4th Ed). Boston: Houghton Mifflin.

Williams, R.L., Moore, C.A., Pettibone, T.J., & Thomas, S.P. (1992). Construction and validation of a brief self-report scale of self-management practices. Journal of Research in Personality, 26, 216-234.

Williams, R.L., Pettibone, T.J., & Thomas, S.P. (1991). Naturalistic application of self-change practices. Journal of Research in Personality, 25, 167-176.

Woolfolk, A.E. (1993). Educational Psychology. Boston: Simon & Schuster.

Zimmerman, B.J. (1986). Becoming a self-regulated learner: Which are the key subprocesses? Contemporary Educational Psychology, 11, 307-313.

APPENDIX

Lifestyle Approaches (LSA)

Instructions: First put your four digit ID number in the upper right-hand corner. Then for each of the following items, indicate how different or similar that item is to your life style. There are no right or wrong responses to these items, and your responses will in no way affect your grade in this course. The purposes of this research project will be best served if you try to be very objective in responding to the items. Use the following scale in responding to the items:

(A) Very different from me

(B) Somewhat different from me

(C) Uncertain

(D) Somewhat similar to me

(E) Very similar to me

Simply indicate your response to each item by placing the appropriate letter in the blank before that item.

_____ 1. In most situations, I have a clear sense of what behaviors would be right or wrong for me.

_____ 2. When confronted with many different things to do, I have difficulty deciding what is most important to do.

_____ 3. After making a decision about what is most important to do at any given time, I easily get sidetracked from that activity.

_____ 4. Once I decide what is most important to do at any given time, I start on that task right away.

_____ 5. I have difficulty judging how long it will take me to complete a task.

_____ 6. I keep my work space well-organized.

_____ 7. I have a clear sense of what I most want to experience in my life.

_____ 8. I complete tasks at the time I say I'm going to complete them.

OVER

(A) Very different from me

(B) Somewhat different from me

(C) Uncertain

(D) Somewhat similar to me

(E) Very similar to me

_____ 9. I'm confused as to the kind of personal qualities I want to develop in my life.

_____ 10. I have difficulty matching various tasks with my energy level.

_____ 11. I subdivide big tasks into a series of smaller tasks.

_____ 12. I have little idea as to what I most want to achieve in my life.

_____ 13. I actively work to make the place where I spend a lot of time more attractive.

_____ 14. I complete major tasks well in advance of deadlines.

_____ 15. When I deviate from my selected goal, I have a hard time getting back on track.

_____ 16. My living space is quite messy.

Scoring Procedures for LSA

For positive items (+) use the following scale in recording your response: A=0, B=1, C=2, D=3, E=4. For the negative items (-), use the following scale in recording your response: A=4, B=3, C=2, D=1, E=0

Factor 1 (Performance Focus and Efficiency)

Item 2 (-) _____ A=4, B=3, C=2, D=1, E=0

Item 3 (-) _____ A=4, B=3, C=2, D=1, E=0

Item 5 (-) _____ A=4, B=3, C=2, D=1, E=0

Item 10 (-) _____ A=4, B=3, C=2, D=1, E=0

Item 15 (-) _____ A=4, B=3, C=2, D=1, E=0

Factor I Total _____

Factor 2 (Goal-directedness)

Item 1 (+) _____ A=0, B=1, C=2, D=3, E=4

Item 7 (+) _____ A=0, B=1, C=2, D=3, E=4

Item 9 (-) _____ A=4, B=3, C=2, D=1, E=0

Item 12 (-) _____ A=4, B=3, C=2, D=1, E=0

Factor 2 Total _____

Factor 3 (Timeliness of Task Accomplishment)

Item 4 (+) _____ A=0, B=1, C=2, D=3, E=4

Item 8 (+) _____ A=0, B=1, C=2, D=3, E=4

Item 11 (+) _____ A=0, B=1, C=2, D=3, E=4

Item 14 (+) _____ A=0, B=1, C=2, D=3, E=4

Factor III Total _____

Factor 4 (Organization of Physical Space)

Item 6 (+) _____ A=0, B=1, C=2, D=3, E=4

Item 13 (+) _____ A=0, B=1, C=2, D=3, E=4

Item 16 (-) _____ A=4, B=3, C=2, D=1, E=0

Factor 4 Total _____

Grand Total of factor totals _____ (your total score on LSA)

ID No. _____

TMQ

Instructions: For each of the items included in this checklist, indicate how often you engage in that activity. Inasmuch as there are no right or wrong answers to the questions, please be as accurate as you can in estimating the frequency of your involvement in each activity. Simply put the number corresponding to your response in the space before each item. Before you begin, be sure to write your 4-digit ID number (last 4 digits of your social security number) in the space in the upper right-hand corner of this sheet. Use the following scale in responding to each item:

(5) always
(4) frequently
(3) sometimes
(2) infrequently
(1) never

_____ 1. Do you make a list of the things you have to do each day?

_____ 2. Do you often find yourself doing things which interfere with your schoolwork simply because you hate to say "No" to people?

_____ 3. Do you usually keep your desk clear of everything other than what you are currently working on?

_____ 4. Do you plan your day before you start it?

_____ 5. Do you feel you are in charge of your own time, by and large?

_____ 6. Do you have a set of goals for the entire semester?

_____ 7. Do you make a schedule of the activities you have to do on school/work days?

_____ 8. On an average class day do you spend more time with personal grooming than doing schoolwork?

_____ 9. The night before a major assignment is due, are you usually still working on it?

_____ 10. Do you write a set of goals for yourself for each day?

_____ 11. Do you believe that there is room for improvement in the way you manage your time?

OVER

Response Scale: (5) always, (4) frequently, (3) sometimes, (2) infrequently, (1) never

_____ 12. When you have several things to do, do you think it is best to do a little bit of work on each one?

_____ 13. Do you spend time each day planning?

_____ 14. Do you make constructive use of your time?

_____ 15. Do you regularly review your class notes, even when a test is not imminent?

_____ 16. Do you have a clear idea of what you want to accomplish during the next week?

_____ 17. Do you continue unprofitable routines or activities?

_____ 18. Do you set and honor priorities?

ID No. _____

Scoring Procedures for TMQ

There are three scales for this inventory: Short-Range Planning, Time Attitudes, and Long-Range Planning. Except for the items that are reversed scored (2, 8, 9, 11, 17), you may record the same number as the student used in responding to the item. However, for items 2, 8, 9, 11, and 17, a 5 response from the student is scored as a 1, a 4 response as a 2, a 3 as a 3, a 2 as a 4, and a 1 as a 5.

Short-Range Planning	**Time Attitudes**	**Long-Range Planning**
1. _____	* 2._____	3. _____
4. _____	5._____	6. _____
7. _____	* 8._____	* 9. _____
10. _____	*11._____	12. _____
13. _____	14._____	15. _____
16. _____	*17._____	**Total** _____
18. _____	**Total**_____	
Total_____		

* Reversed Scored

VITA

Donald Elliott Price was born in Vancouver, Washington on August 19, 1944. He attended elementary and junior high school in Camas, Washington and graduated from Camas High School in June, 1963. The following September he entered Willamette University in Salem, Oregon where he did not do well. He quit school and worked for Crown Zellerbach making toilet paper and this helped his decision to give school another chance. He attended Clark Community College in Vancouver, Washington and raised his GPA. He attended Central Washington University in Ellensburg, Washington in September of 1966 and received his Bachelor of Arts in Psychology in 1969. He spent 20 years in the US Army, completing his Master of Education degree in Student Personnel Services while stationed as an ROTC instructor at Tuskegee University.

He is presently employed as a Regional Trainer for Excel Telecommunications and building a log home in the Opelika, Alabama area.